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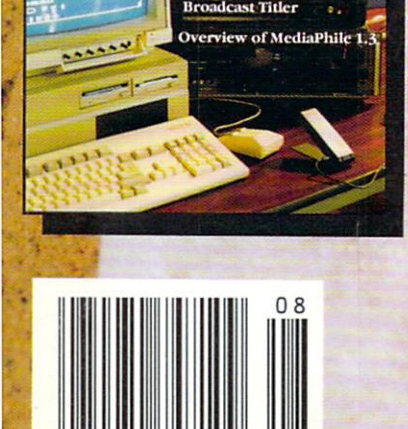

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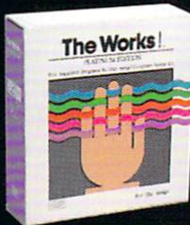

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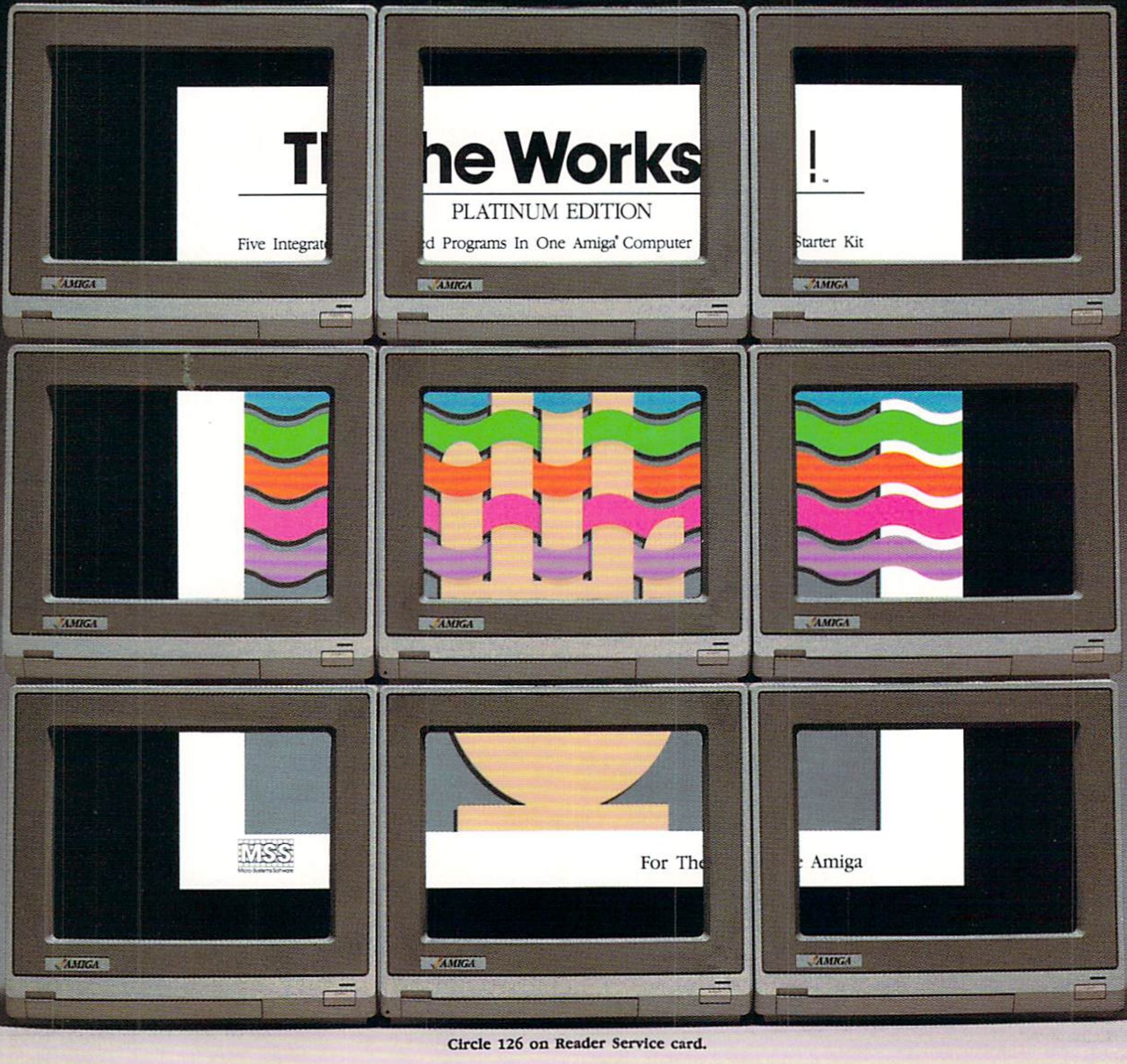

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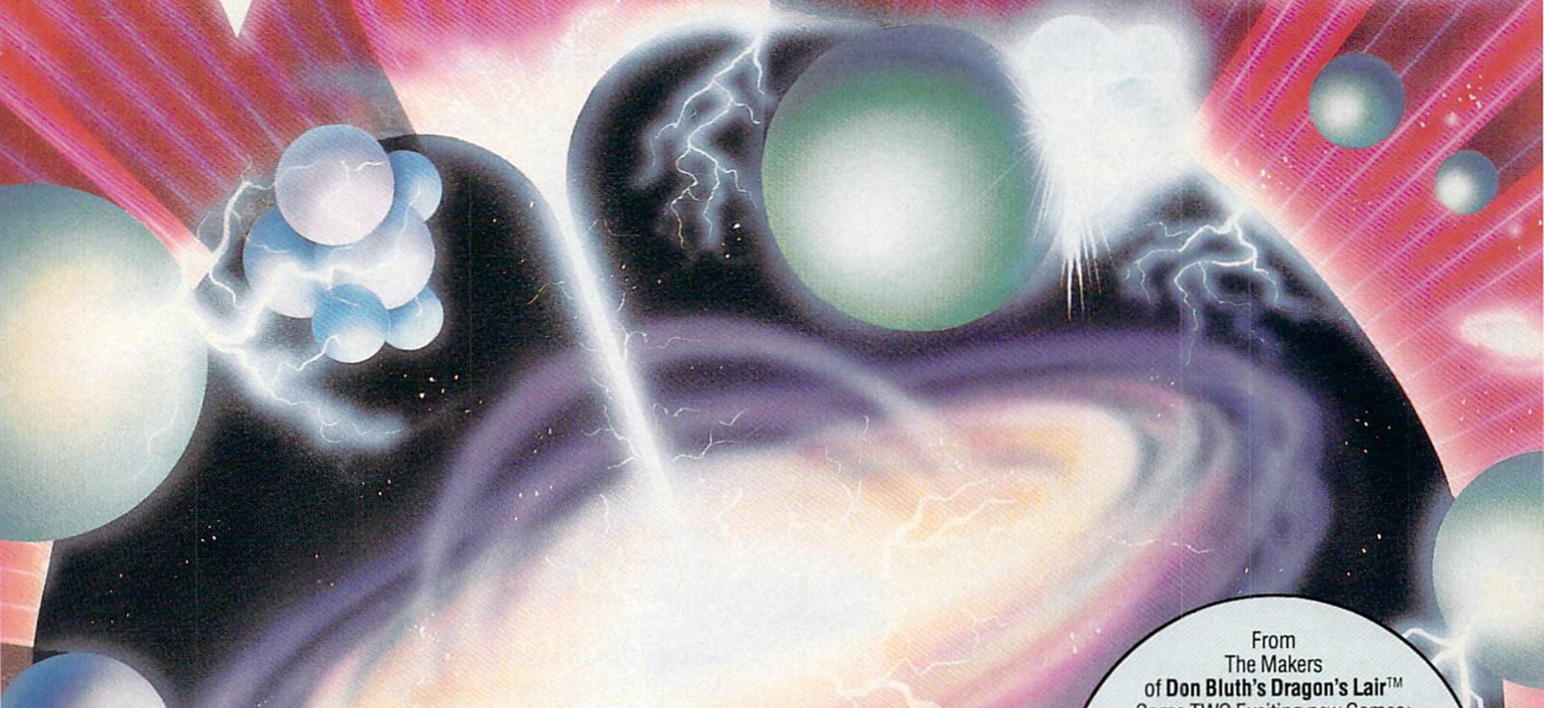

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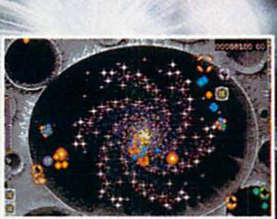

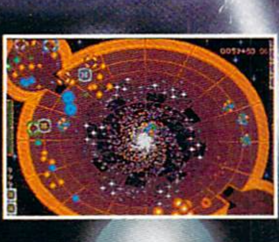

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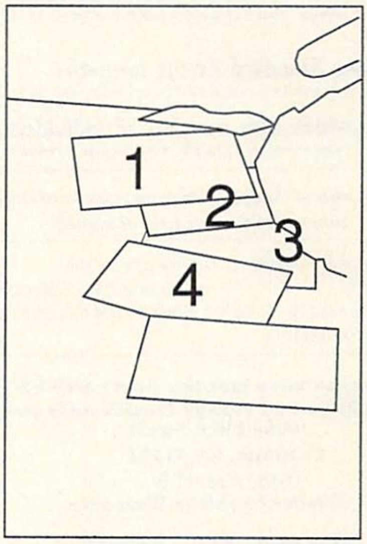

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Card #2 by William Chadwick.

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Dear AC:

I read Mark Steffensen's letter in *Amazing Computing* 4.4 with interest, as his printer difficulty with Deluxe Print sounds like a problem I had with the original release of Deluxe Paint. I believe all that he needs to do is replace the "printer.device" file on his Deluxe Print disk with a copy of one from Workbench 1.3 disk.

As long as I'm writing in, I thought I'd mention how much I enjoy this magazine, particularly the C and Assembly-Language programming articles. I found *Creating a Shared Library* and *Guru Wisdom* to be especially useful. Keep up the good work.

Sincerely,
David Gross
Ithaca, NY

-Thank you for taking the time to write. -=MM=-

Dear AC:

Amiga X-10 control software was the last of the three necessities I had to get before I could stop using my C-64 daily (the other 2 being word processor and planetarium simulator). My search for it ended when I saw the entry for Complications in Amazing Computing (V.3,#5, p.73). Their address is given as both 1727 and 727 parkview; 1727 is correct. They were selling the X-10 CP290 interface and software for it, but when I wrote them in May 1988 they were willing to sell just the software. I have no idea why they're not listed in Amazing's Product Guide, just out. They have an ad in the April 1989 Amiga Transactor (V.2,#1 p.16). The program is mostly mouse operated, but not with a purely graphical interface. You click a text string describing your waterbed heater rather than an icon picturing it, and you type in a string for the time rather than move a slider. I found this a great relief in moving from the C-64 version, which was pure graphic but made me set event times digit by digit with joystick and fire button.

There's a rather more expensive program, Intruder Alert, listed in the InterComputing ad in INFO (Mar/Apr 1989, p. 74). It is listed as an alarm with X-10 control: I have no idea what it does.

Sincerely,
Harry R. Meyer
San Diego, CA

-The correct address is:

Complications
1727 Parkview
Redlands, CA 92374
(714) 794-5311

Another company that has X-10 control is:

Didgital Dynamics
739 Navy Street
Santa Monica, CA 90405
(213) 396-9771

See the review of Intruder Alert by Software Terminal in this issue. -=MM=-

Dear AC:

After waiting for over four years, I think it's time for launching a FLAME aimed at Commodore and AC is the best magazine for airing it.

FLAME ON

Let's face it Commodore, AmigaBASIC is the MOST frequently used language on the AMIGA computer line and we haven't seen a decent upgrade to it since day one! Over the years the AMIGA's inception, we (READ-YOUR CUSTOMERS) have seen some very nice hardware and system software upgrades coming from your talented engineers but we still haven't seen a decent upgrade to that "bow-bow" interpreter. For instance, we want:

a) The mysterious "NO END IF" error and all other bugs that appear when developing LARGE applications to be SQUASHED. (I know it's not easy but at least **TRY** to make it bug free).

b) MUCH BETTER sound support. Only a 256 byte sound buffer? come on give us a break! How could you dare to limit us to 256 bytes with all that audio power under the hood (it's like hanging a carrot on a stick in front of a horse).

c) Better animation performance. I know that since it is an interpreter and not a compiler, you are constrained by what you can do to provide faster, smoother scrolling and object animation, but AT LEAST give us collision detection that ACTUALLY WORKS predictably.

d) Mixed data type support. Let's have a TYPE-END TYPE data record statement pair so we "lowly" BASIC programmers can shorten the gap between C and BASIC.

e) Support for BINARY file type I/O. This is a must for any serious data manipulation programs.

f) A SHELL statement so we can execute CLI commands easily from within our programs.

g) Keyboard event trapping so we can painlessly incorporate keyboard shortcuts into our programs.

h) A PIXELREAD function so we can determine what color is being displayed and make decisions based on it.

i) A PALLETTE READ function so we can restore the user's color scheme on program exit.

j) Built in FONT support statements/functions for opening and changing fonts (another carrot in front of the horse type of frustration!).

k) Finer text placement control down to the pixel level (not just by line and column numbers).

l) Built in **IFF** graphic load/save routines- for OBVIOUS reasons.

I can go on a bit longer but I think you get the message and this should be enough to keep you busy working for *your* customers for awhile. I have a strong feeling that a great deal of AMIGA users agree with me on most of the points above so let's get the ball rolling Commodore. SPEND a little money to SATISFY YOUR CUSTOMERS because that's what business is all about-right? Spend a **little** now and make a **lot** later. Either have your own fine engineering people upgrade the code (I wonder if you even have any DEVELOPMENT/SUPPORT staff assigned to AMIGA BASIC...?) or pay Microsoft to do it-but just do it!

FLAME OFF

In closing, I'd like to say a word to the third party BASIC compiler developers out there. You guys are light years behind your counterparts in big blue land (QUICKBASIC and TURBOBASIC both have fabulous integrated environments) so start catching up. Now that you have a decent amount of competition amongst yourselves you better keep

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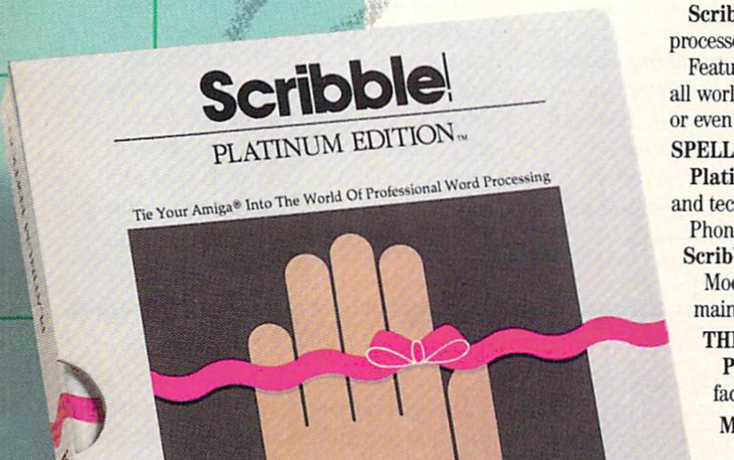
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Sincerely,
Anthony
DaSilva Jr.
Clay,NY

- Many of these 'demands' can be accomplished through the use of library calls or by using a third-party's BASIC. There is an AmigaBASIC command to read pixel color called POINT. Commodore does have many talented developement/support personel, but not enough to do it all.

I have to agree that it is time Commodore worked out a deal with Microsoft to upgrade AmigaBASIC. After all, it is the only language that is shipped with the Amiga, and should therefore put the power of the machine at owner's fingertips. -=MM=-

Dear AC:

Three cheers for your February 1989 issue! Not only did we witness the return of that most helpful column Bug Bytes, but for a change there are no reviews of games in Amazing Computing. Without denying the great allure of the Amiga as a game machine, there has been far too much attention paid to games by Amiga publications and software developers.

The area I would like to see more growth in is educational and scientific software, which remains to be in pitifully short supply despite the hardware capabilities of the Amiga in those areas: there is to my knowledge not one commercial package that makes use of the Amiga's audio capability for music education or one that supports scientific plotting (i.e. log-linear graphs).

One suggestion for an Amazing column: public domain programs and shareware. A question that may be of interest to many readers; are ARP and Conman still useful with the advent of Workbench 1.3?

Sincerely,
Robert Y. Eng
Redlands, CA

-Commodore is trying hard to implement many of the concepts found useful in programs like Conman in V1.4. ARP will essentially become part of the new ASL.Library in V1.4, see "V1.4: A Pre-preview" and "A New Attitude: DevCon SF '89" in this issue for more info. -=MM=-

Dear AC:

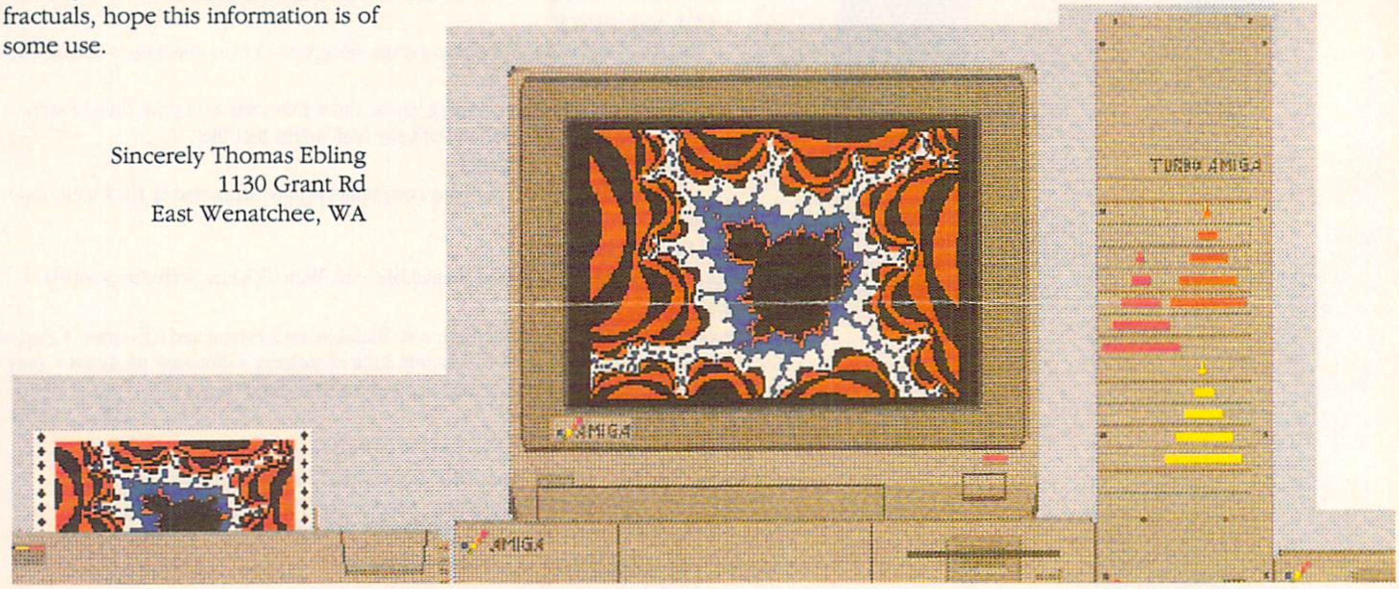
I would like to congratulate you on a great magazine, and make a few suggestions about your programming example articles.

I would like to see more articles that relate to programming the Amiga, but also I would like to see more variety in the languages used for examples. While 'C' language is the de-facto standard for Amiga programming, I am sure there are many people (like me) who dislike the style of 'C'. Why not use different languages for your examples, there are many that have received bare notice. I think more attention should be paid to such languages as Compiled Basics, Assembler, Modula-2, Fortran, Forth, Draco, Lisp, Pascal etc. There is a multitude of programming examples in the public domain for the new 'C' programmer, but these other languages remain virtually ignored. In order to show off the versatility of the Amiga, it is necessary to show a wide diversity of languages for it. Some languages are particularly suited to individual needs, by using 'C' in most examples, it seems you are giving out a biased impression. In many cases a new user who wishes to program the Amiga will be better suited with a language other than 'C'

Dear Mr. Castonguay,

I just wanted to respond to your "Amazing Computing" article on Fractual Fundamentals. I have Absoft's compiler version 1.3. I compiled your AmigaBASIC listing, the run time was cut down to just under 2 hrs 33 mins. Below is a picture of my computer set up. A1000 w/2.5 meg. I do not have a math chip or 68020/68030 cpu. I would recommend anyone that is comfortable with AmigaBASIC and does not want to take the time to learn another language get Absoft's compiler. I am looking forward to your next article on fractuals, hope this information is of some use.

Sincerely Thomas Ebling
1130 Grant Rd
East Wenatchee, WA



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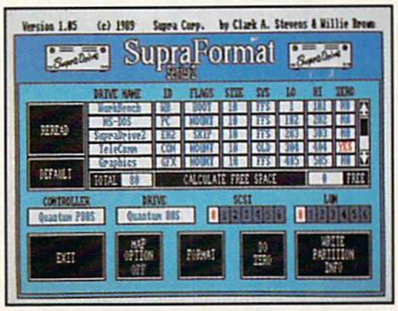

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SupraDrive2	DH2	SKIP	10	FFS	203	303	NO
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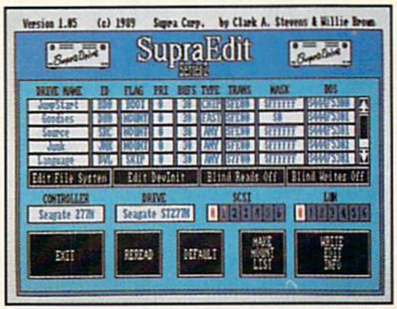

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Goodies	DH0	MOUNT	0	30	FAST	$FE00	$0	$444F5301
Source	SRC	MOUNT	0	30	ANY	$FE00	$FFFFFF	$444F5301
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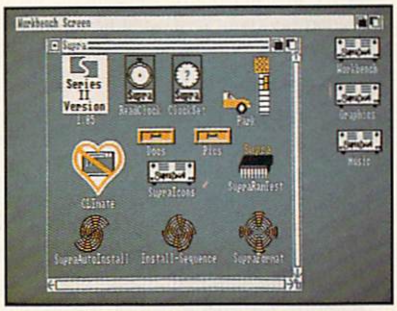

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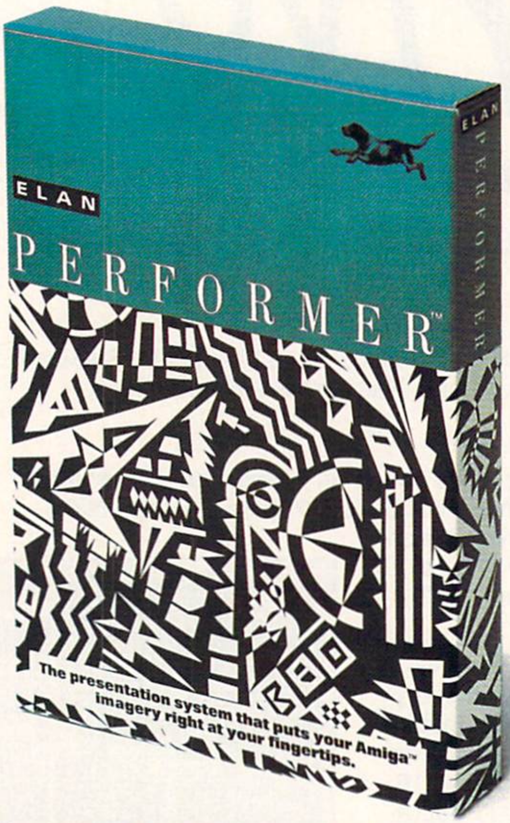
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A suggestion to developers of software is to release a demo version into the public domain. There are a few demo programs in the Fred Fish collection, but is this not a great way to spread the news of your product far and wide and give potential buyers the chance for hands-on evaluation. I think this could lead to less piracy, and an increase in the quality of software. What better way to compare software than by using different products.

I would like to conclude with a congratulation to Amazing Computing, this is one of the best Amiga magazines available!

Sincerely Yours,
Bob Lockie
Burlington, Ont,Canada

-AC wants to have as many articles on different languages as possible. Because we rely on freelance authors there are occasions when we may have a dry spell or a complete drought concerning certain languages. In this issue there are articles in AmigaBASIC, True BASIC, and C. In next months issue there will be an article in Fortran, Fourth, C, AmigaBASIC, and we will break new grounds with an introductory programming article in APL. We try to support as many languages as possible and we appreciate your concern. -=MM=-

Dear AC:

John Steiner's Super *Bug Bytes* column in Amazing Computing, V4.2, described a work-around that permits using Fast File System on the first (user's) partition of a hard disk. It involves use of the public-domain program ASSIGNDEV. I tried this without success, receiving a message to the effect that "DHO; cannot be removed." (I used the later version of ASSIGNDEV, a modification by Olaf Seibert, as found on Fred Fish Disk #111).

Remembering that the original ASSIGN command can be used in the form

```
ASSIGN name:
```

to remove an assignment, I tried "ASSIGN DHO:" with each of the AmigaDOS 1.2 and the ARP 1.1 versions of ASSIGN, and the revised ASSIGN of AmigaDOS 1.3, but each time was informed that DHO: could not be removed. Then I tried the new form available in AmigaDOS 1.3:

```
ASSIGN DHO: REMOVE
```

and it worked!
All I had to do then was MOUNT DH0: (making sure that there was a mountlist entry for Fast File System), and I was able to use *all* hard disk partitions at high seed. In two weeks of use, I have encountered no side-effects.

Sincerely,
George W. Zopf
Arroyo Seco, NM

-Thank you for taking the time to write. Your persistence will save somebody else a headache. Thanks. -=MM=-

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Superplan

Spreadsheet and time manager for business use

by Marion Deland

Superplan is a new spreadsheet, time management, business graphics program from Grafox Ltd., a British subsidiary of Precision Software.

Precision deals primarily with PC-compatibles, and that's where this program originated. Superplan is a powerful program designed for business use, but it is clearly a PC-style program (and a British PC program at that!) with a mouse/menu interface tacked on top. Intuitive Superplan is not, and it has some stiff competition in MaxiPlan, which has an excellent Amiga interface.

Superplan evolved from Logistix, also a PC port and one of the first spreadsheets for the Amiga. Logistix was praised for its power and condemned for its lack of an Amiga interface. With Superplan, Grafox has tried to add an Amiga interface (Phil Reynolds is credited with the "Amiga conversion"), but they have not taken it far enough.

Precision emphasizes the time management aspect of Superplan, and at the moment it is the only program available in that category. If you are an experienced spreadsheet user in need of project/time management, this may be the program for you. Otherwise, you will need to put in some study time. Don't expect Superplan to compare with Precision's Superbase line for ease of use.

Frankly, I was disappointed. I had looked forward to reviewing Superplan because I had worked with the various versions of Superbase and found them to be everything Amiga programs should be. I have also worked with a number of spreadsheets—both Amiga and PC—but Superplan made me feel like a novice. Although I liked the program's time/project management aspects, I found the program frustrating to deal with and the manual useful only as a tutorial, not as a reference.

Using Superplan

While I was waiting for my copy of Superplan to arrive, I made two lists: (1) What I expected from a spreadsheet program, and (2) What I expected from an Amiga program. Superplan meets most of the first list and almost none of the second.

Facts and figures

Protection: The copy of Superplan you buy is dongle-protected. As they did with Superbase, Precision offers a non-protected version (encoded with your name) for $10.00 when you return the registration card. Precision expects to upgrade Superplan regularly, as they have done with Superbase. Although Precision is a young company in the U.S., their customer support for Superbase thus far has been good, and this may be the key to success for Superplan.

Size: A Superplan worksheet is 2048 rows by 1024 columns, for a total of 2,097,152 cells. Cell count is the same as Lotus 123, but much smaller than MaxiPlan's 8,388,608 cells. Recommended is 1 meg of memory; the "readme" file warns that the charts take a lot of memory.

Speed: Superplan is slow. I am not talking about benchmark comparisons of recalculation speeds, etc., which I did not do, but about the time it takes to enter data in cells and move around the sheet. Often I pressed return twice, thinking the first had not taken.

Startup: There are a variety of startup options: number of colors, interlace, custom screen, etc. The default mode is a custom screen with 8 colors, but because the status area takes up 4 rows, I soon switched to interlace. Worksheets are not saved with icons, so there is no option to click on the file icon and have it load Superplan.

Slash commands

To use Superplan, you type "/" for an alphabet of "slash" commands, some of which access another series of commands. This sounds like Lotus 123, but the commands are quite different. When you first press "/", you see an alphabet. You cursor through the letters to find what each one stands for. If you click on letters with the mouse, they execute. (Doesn't Phil Reynolds know about "one click to select, double click to execute"?)

> *Superplan is a powerful program designed for business use, but it is clearly a PC-style program (and a British PC program at that!) with a mouse/menu interface tacked on top.*

This alphabet of slash commands sometimes seems a little forced. Critical path commands, for example, are accessed by "/k" (for Kritical). Graphs are accessed not by "/g", but "/v" (View). Not intuitive, but you get used to it. All the expected spreadsheet manipulation commands are there, though sometimes the terms used are unexpected, like "Prefix" for the directory path.

Time management

Time and project management is where Superplan really becomes useful. (I wish I had had Gantt charts when I was managing a corporate publications department!)

You create timesheets with the Calendar commands, accessed with "/c". A calendar can reflect time periods from half-hours to years (or non-standard time units using a look-up table), and a five, six, or seven-day work week.

Creating a timesheet is fairly straightforward. The default start date is

1/1/84 (presumably, this dates from Logistix' introduction), so the first step is to change this and other options. Next, you edit the calendar to change working hours or days. Next link the calendar to columns of the current worksheet. The calendar is invisible on the worksheet until you enter commands. For example, DOMOY(COL) displays the day/month/year of the current column.

It becomes a timesheet when you assign rows to different people or equipment. A Gantt chart displays the timesheet graphically as labeled boxes. PERT charts, which show the project as a network of intersecting paths, are not mentioned.

Critical path analysis lets you see the shortest possible time the project can take, and the various jobs involved. (Time functions in Superplan let you indicate the start, end, order and length of the jobs.) Example files help demonstrate this useful facility.

Other spreadsheet functions

Superplan has one difference in approach that may prove confusing. With most spreadsheets, you select a range, then use a command like "copy", "print", "graph", etc. on that range. Superplan does it the other way round—you select the command, then choose a single cell, a range or the entire worksheet. This is fine once you catch on, but it does not help with the learning curve. (By the way, you cannot select a range by dragging with the mouse, but you can click on the "corner" cells.)

Worksheets can be linked with the "/j" (Join) command, "consolidating" or subtracting data from the worksheet in memory. The example in the manual consolidates data from three monthly worksheets to produce quarterly figures.

Superplan also includes database capability, and here it seems more straightforward than MaxiPlan. You simply lay out the records as a table, and use the "/t" (Table) commands to manipulate them. You can sort, find and extract data, and load records from a dBase file. Database functions allow for statistical analysis of records: counting, averaging, etc.

Programming

Superplan was intended for use in custom applications. As with most spreadsheets, you can write macros that control user access to the program. You can also rewrite the drop-down menus.

A friend of mine who is a Lotus user suggests that this could be the reason for lack of a useful Amiga interface in Superplan. It may be that Grafox expected the macros to become the real interface, as they often are in PC spreadsheets, especially in a business environment. From this viewpoint, the Amiga interface becomes a nice extra, but not really important. Whether Amiga users agree remains to be seen.

There are two ways to create macros in Superplan. "Autos" are shortcuts for commonly used key sequences; they are defined quickly and easily. Superplan remembers your keystrokes, and you add commands for cursor movements, returns, prompt line messages, etc. Autos are loaded with the program, and listed as menu options, with CTRL or ALT keystroke combinations. (No AMIGA keys, of course.)

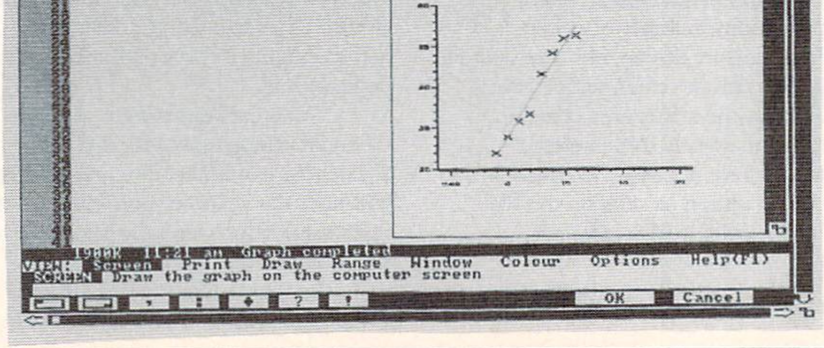
"Macros" are more extensive. They are written into the worksheet as a series of commands (a "macro language"), and offer more options, allowing you to automate a worksheet. One command, for instance, allows you to protect your macro from accidental changes by the user. Another blanks the screen so you can hide the workings of the macro. A chart in the manual lists some Lotus/SuperPlan macro equivalents.

A "Learn" option enters macros into the worksheet automatically, saving on typing and the risk of errors. This is a nice touch, available in several business-oriented spreadsheets. You can also Step through the macro—invaluable for debugging!

You can run other autos/macros from within an auto or macro, to build detailed applications. The manual includes a macro tutorial for building a mailing list in Superplan.

One point may confuse Lotus users. Macros are accessed by the "/x" (Execute) command, and options include "l" (Learn). Combined, the two mean something entirely different from the Lotus macro command "/xl".

Superplan also has an ARexx port, so data can be passed to Superbase



```
Regressiongraph

                4       5       6       7       8       9      10      11
DATA V       25.8    31.7    37.3    40.1    54.7    62.4    67.8    68.8
REGRES     24.767  31.569  38.371  45.174  51.976  58.779  65.581  72.383
x * x          16      25      36      49      64      81     100     121
y * y      665.64  1004.9  1391.3    1608  2992.1  3893.8  4596.8  4733.4
x * y       103.2   158.5   223.8   280.7   437.6   561.6     678   756.8

S(x)           60 S(x*x)     492
S(y)        388.6 S(y*y)   20886
n               8 S(x*y)  3200.2

a =        -2.443 r^2    [illegible]
b =        6.8024 var     11.046

1988K  11:21 am  Graph completed
SCREEN Draw the graph on the computer screen
```

Left
Regression graph plotted in Superplan

Professional 3. (ARexx itself is not supplied.) For example, data can be passed to Superplan, where a graph can be created. Then the graph can be displayed in Superbase as an external graphics file. An example ARexx program is included. Precision is putting a lot of emphasis on the program's ARexx compatability, but the truth is that ARexx, while it has enormous potential for the Amiga, is not easy to learn. Will Superplan users want to learn another language to communicate with Superbase?

Charts

Charts are not easy to set up in Superplan, but you do have a lot of flexibility. Those of us who are used to selecting a range/graph type and having the program create the graph, as in MaxiPlan or even a PC spreadsheet like Quattro, have to put more thought into creating Superplan graphs.

Graph types include bar (6 types, with 3D option), pie, scatter, area, line/step/tick, spread, Gantt and text-only.

Each element—axes, labels, titles, grids, frame, etc.—is entered separately as a command in the worksheet. Each element can have its own font, size, color, hatching style, etc., and any individual segment of a pie chart can be "exploded".

There are limitations. For example, you cannot use your Workbench fonts, but Superplan provides ten fonts including several serif and sans serif typefaces, two scripts and an Old English style. Style commands for text can be entered in graphs but not, as far as I could tell, in regular worksheet cells.

To view graphs on the screen, you must run Superplan on a custom interlaced screen. In the default low-res, they are barely legible. This is probably why 1 meg of memory is recommended.

Printing

I looked forward to printing out gorgeous full-color charts on my HP PaintJet. It was not that easy. Here's my sad story.

The "readme" file advised me to use Superplan's printer drivers; my Amiga Preferences printer driver would simply give me a screendump. Fine. But there was no driver for any of my three printers—HP PaintJet, Panasonic 1091 and Okimate 20, all common Amiga printers. Nevertheless, there were 12 Epson drivers, 9 NEC and 4 IBM! There are also drivers for plotters. How many Amiga users that you know use a plotter?

I would settle for a Preferences version, but there was no information in the manual about Preferences; it's not a PC concept. I had to search the interminable list of printer drivers by hitting the spacebar. I eventually found it under "Screendump", right at the end of the list.

Using Preferences did not help after all. All I got was a "printer initialisation error" (British spelling and all). As a last resort, I tried the "Dump" option to dump the graph to disk and print it separately. When I loaded the file into Butcher to print it, the graph was small, illegible, and the resolution did not match the original. It turns out that this option is really useful only in interlace, where it works fine. There is no information on this in the manual.

Next, I wanted to print out part of my worksheet (text). I looked in the manual to find out how to select a range, and began to struggle with the index. It took four attempts—"Range", "Print", "Output range", and finally "Outputting to the printer"—before I found what I needed. By using the default printer driver (which works for text, but not for graphics), I got my printout.

The aiming interface

Menu options act as autos, executing the slash commands for you. This has pros and cons. It is helpful to see the commands appear and execute. You get a feel for how the program works. On the other hand, it is painfully slow, and you have to keep track of where you are in the program. Several times I had to wait while the graph displayed twice, because I used the menu to save a Superplan worksheet (/SS) while I was still in the graph commands. ("S" displays a graph onscreen.)

Only one worksheet can be loaded at a time, and since the menu options ignore warnings, it is easy to wipe out your current worksheet by loading another from the menus. Amiga users expect multiple files; we do not expect a new file to wipe out the current one—at least not without warning.

Superplan does not use the Clipboard to copy a range from one worksheet to another. To do that, you make a note of the cell range, load in the new worksheet, and merge the cell range from the first worksheet stored on disk. Clumsy by Amiga standards.

Windows

Some use is made of Amiga-style windows for the help screens and graphs, but they are not well thought out. The help window has a gadget that pops it to full screen size if you have made it smaller. Nice, but why doesn't the graph window have one too? The graph appears in the lower right corner by default. To

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resize it enough to make it legible in the default low-res mode, you have to move it first.

The worksheet window can be resized, but only vertically. This means that if you have loaded Superplan into a Workbench screen, which many people prefer, you cannot open a space at the right to get at the disk icons to multitask another program. (Did Phil Reynolds ever use an Amiga?)

There are no requesters. File directories and such are displayed in the worksheet area. If you want to open a worksheet from the keyboard, you type "/" for the slash menu, then type or select "z" to clear (zap) the current worksheet, "y" to confirm, followed by "/l" to load the new one and "s" for "Superplan file". Then you press F2 for the list of files, wait while the worksheet clears (slowly) and the list appears, then select the file you want.

Color

Believe it or not, you cannot adjust colors within Superplan.

Superplan assumes you are working with PC colors (red, purple, light cyan, dark cyan, etc.). Your Workbench colors will replace the first four colors, though the program will continue to refer to them as black, white, cyan and orange. (Confusing? Believe it!)

You can change the order of colors, making the background "white", the border "red", etc. This is one area where the mouse interface works. You can select color combinations by clicking on them.

Help

The manual and help screens vary—very detailed and helpful on some subjects, and irritatingly vague on others, especially those that deal with the Amiga. It is clear that this is the manual for the PC version of Superplan, with the addition of an Amiga introduction and a few insertions. (References to PAGE UP and PAGE DOWN keys, not available in the Amiga version, remain.) The mouse is mentioned at the beginning and thereafter ignored. Everything else, even the help screens, assumes you will be using the keyboard—the PC keyboard.

The index does not contribute much. It was evidently created automatically with a word processor simply by listing all headings and subheadings. For instance, the single word "text" in the index refers to a minor point—how to include text in an "if/then" expression. I found what I needed on the second try, under "Entering text". I could not find out how to copy a range from the index at all. And pie charts are not listed under "pie" or "charts", but "common pie charts".

The help screens are more useful. They are context-sensitive. For instance, if you ask for help while you are in the /V (View) command, you will get a help screen on that subject. For the most part, help screens repeat information from the manual, but sometimes they provide more detail.

A "quick reference" card helps too, especially in explaining the menu of slash commands.

There are also extensive example files on a second disk—most of them very business-oriented. For example, one demonstrates a macro that calculates and displays a "best fit" regression line. (Will many Amiga users need this kind of analysis?) Another evaluates an investment proposal, first in terms of a profit and loss projection, then as a detailed cashflow analysis. A more immediately useful file shows examples of the various graphs available.

Will Superplan meet your needs in a spreadsheet/project management program? That depends on your needs. It would have a valid use in a business where a worksheet template is used over and over for various projects. Precision sees it as particularly useful for, say, a video production company with a number of clients and projects. But the time it takes to learn and set up will be too much for most of us.

And it's not an Amiga program! •AC•

Grafox
A Precision Software Company
6 ParkTerrace
Worcester Park
Surrey KT4 7JZ, UK
Tel: 01-330-7166
FAX: 01-330-2089
Telex: 8955021 Precis G
Superplan, $149.95
Inquiry # 178

New Products and Other Neat Stuff

by Elizabeth G. Fedorzyn

Eye-hand coordination

What is the most difficult thing to sit through? Back-to-back episodes of *Growing Pains*? Well, yes. But a poorly executed presentation can be equally difficult to withstand. Ill-timed, jumbled images being juggled by some hapless individual cursing the incompetency of their equipment—it can be a nightmare, particularly if you happen to be the hapless individual.

Now, with Elan Design's **Elan Performer**, you can organize and present business, education, or video production presentations quickly and easily. Elan Performer lets you put all your Amiga graphics in one place so they can be retrieved and displayed at the touch of a key—no disk swapping or software reloading.

Using the Elan Performer control screen, you simply assign keyboard equivalents to images or animations. Once you have established the sequence of your images, just hit the escape key and your images are ready to be displayed.

You can automatically run through a sequence of images and animations by pressing the space bar. Using the arrow keys, you can go through each image or the individual frames of an animation one at a time. Use the mouse to run forward or backwards through your sequence, or you can simply hit a key to display the corresponding image.

The program also allows for real-time, interactive cutting and splicing of animations. Animations can also be broken down into their component frames, exported to other programs for enhancement, then recompressed in any sequence into a new animation.

Elan Performer supports IFF, HAM, RIFF, ANIM, and RGB formats. The program multitasks with music and sound software and is available in PAL or NTSC video formats. Elan Performer runs on all Amigas with a minimum 512K of RAM.

Elan Design
P.O. Box 31725
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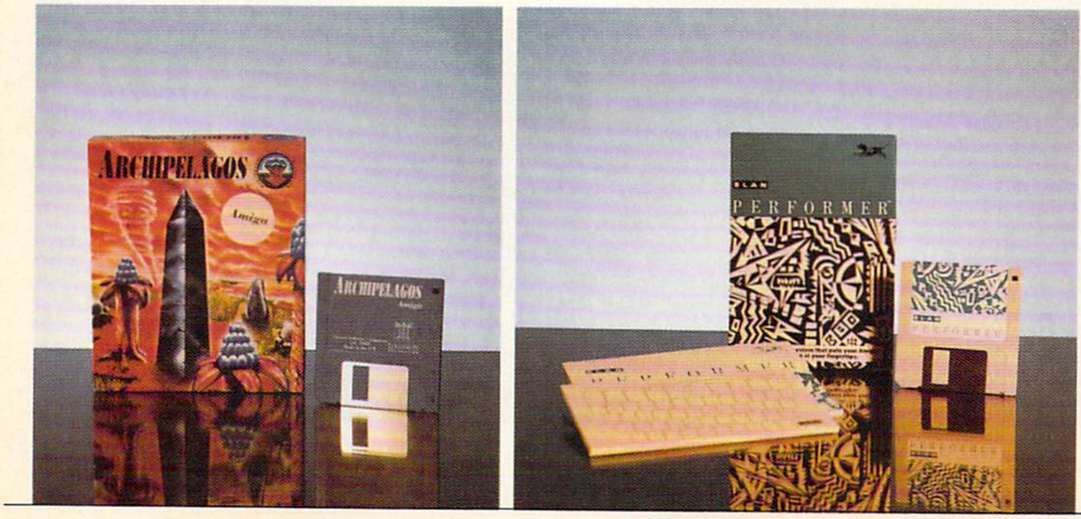
(415) 621-8673
Elan Performer, $59.00
Inquiry #298

Think before you think

"Imagine a game without violence, yet as chilling as abandoned places where people have died and never returned." Sounds a little like *Hollywood Squares*. Actually, the description refers to **Archipelagos**, a game by Logotron of London that is now being released in the US by Fanfare, Britannica Software's new entertainment line.

Archipelagos is a mouse-controlled, 3D arcade game. The setting is this: Long



Archipelogos from Logotron Ltd. (left) and Elan Performer from Elan Design (right)

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ago on a remote planet lived the Ancients, a group of intellectually inclined folks who enjoyed delving into collective thought worlds, dreaming of utopian-like existences where the could meet, relax, and drink tea (and possibly do their best William F. Buckley impressions). Eventually these thoughts became real, and 10,000 of these "perfect" islands, or archipelagos, were produced.

Then the ancients began to dream of a cloudy planet to the north. This place also became real, and one day its inhabitants came to the archipelagos. The visitors liked archipelagos so much that they claimed the islands for their own by placing an obelisk on each island, and ridding the place of its inhabitants by draining the Ancients' blood into the soil (so much for non-violence).

Archipelagos shows an overhead (actually hovering) view of the checkerboard terrain that can be rotated 360 degrees. Your goal is to fulfill the last wish of the Ancients and clear the obelisks from the archipelogos. To do so, you must destroy the obelisks' power source—the standing stones—by draining the stones of their energy. But before you can do this, you must connect the standing stones to the obelisks.

This may involve building a variety of complex structures, such as a vast landbridge from island to island. Other obstacles include "corruptions" formed by the blood of the ancients, neuromancers (tainted bodies of the Ancients), and lost souls. The Ancients are obviously in rough shape, so make an Ancient's day, cast a stone or two.

Logotron Ltd.
Dales Brewery
Gwydir Street, Cambridge
CB1 2LJ England
Archipelagos
Inquiry #300

Scan This

Thanks to Sun Rize Industries and their **IMG Scan**, desktop publishers can jazz up their printed materials with scanned-in clip art, photos, drawings, at an affordable price. The IMG Scan has a remote head that plugs into the parallel port of any dot-matrix printer that has adjustable vertical line spacing and a print head that moves across the cartridge. Epson, Panasonic, Citizen, Citoh, and Star are some printers that fit this description.

The IMG Scan software helps you digitize photographs and drawings, then lets you save them in IFF format for use with paint, desktop publishing, and video programs.

The IMG Scan scans in 256 gray levels, in resolutions of 75, 150, 216, 300, and 360 dots per inch. It works with desktop publishing, paint, and video programs. The IMG Scan comes with a manual, software, and a one-year warranty.

SunRize Industries
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IMG Scan, $149.95
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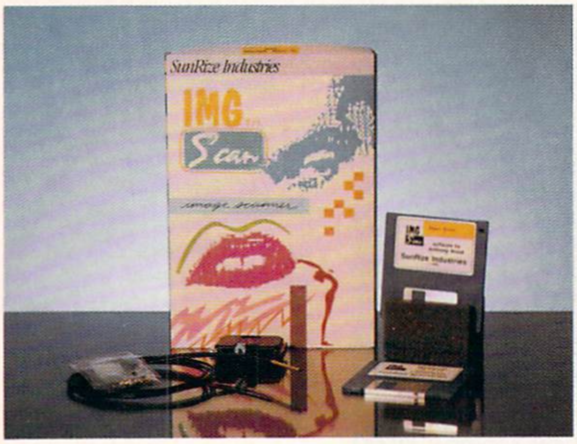

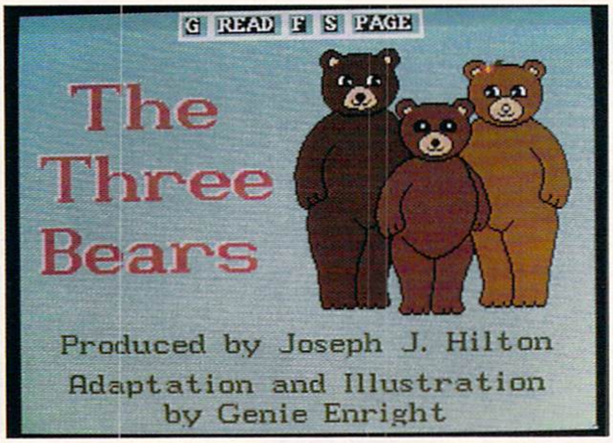

The Three Bears

Produced by Joseph J. Hilton

Adaptation and Illustration by Genie Enright

A look at Sunrize Industries' IMG Scan (left) and Hilton Androids' Three Bears (right)

(continued)

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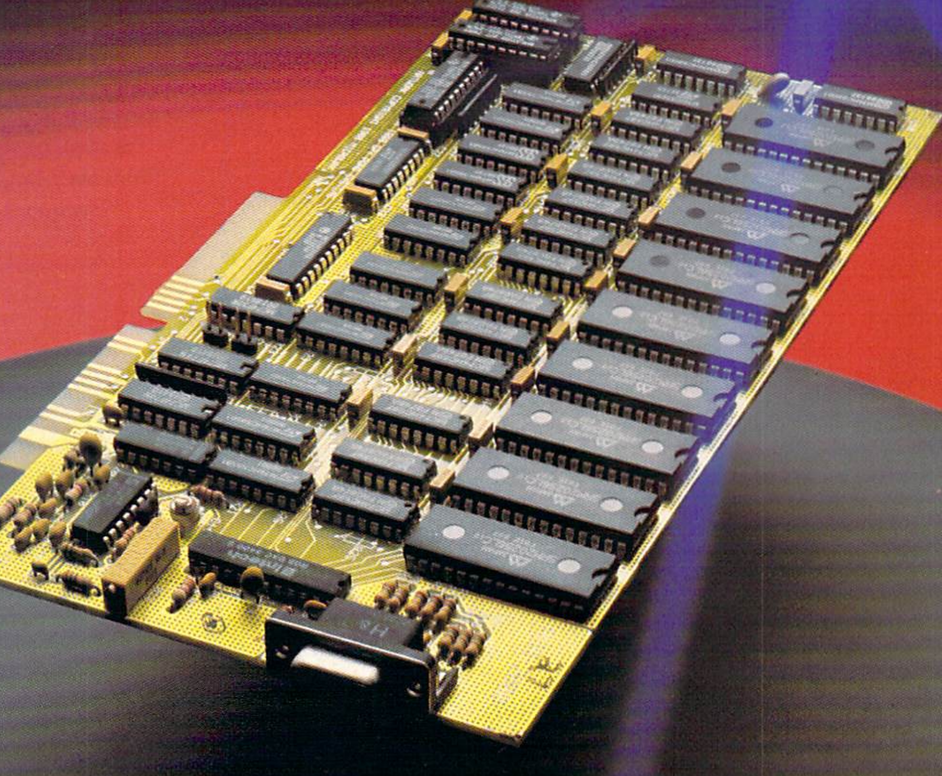

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Trix and Cocoa Puffs

ASDG's new **Dual Serial Board** features high-speed RS 232C serial ports for the Amiga 2000. The dedicated board includes an IBM PC AT style 9-pin male connector for each board; full 7 wire implementation plus Ring Indicator and DCD (Data Carrier Detect); and public domain and shareware software. The Dual Serial Board comes complete with Amiga system software (both a driver and a handler).

The Dual Serial Board provides users with the first fully integrated multiple RS-232 serial port products available for the Amiga 2000. It occupies a single expansion slot on the A2000 motherboard, and it does not prevent use of the original Amiga serial port.

The Dual Serial Board lets you run 3 or more serial devices at the same time, and it opens the Amiga to new applications. Commenting on the possibilities available with the new multiple serial port, Perry Kivolowitz, president and founder of ASDG, said "The Dual Serial Board opens a vast range of applications to the Amiga—from multi-user bulletin board systems and simple LANS, all the way to touch screen information services and exotic laser control systems."

ASDG Incorporated
925 Stewart Street
Madison, WI 53713
Dual Serial Board, $299.00
Inquiry #150

Brainy Bears

The Three Bears have gone electronic in their quest to improve the reading skills of children. The latest in Hilton Android's Robot Readers series has those gregarious Grizzlies and Goldilocks helping teach the youngins' to read using computer graphics and an electronically generated voice.

The Three Bears edition places the traditional story of the young tow-headed lass who sabotages the home of the three mild-mannered bears in a format designed to introduce and improve children's reading skills. While porridge flies, children learn early reading skills, vocabulary, and word recognition—not to mention lessons in social behavior. The program is designed for use with little or no adult supervision; all features are operable by mouse, with either control button initiating action.

Scenes from the story are displayed and accompanied by text. Each word in the text is highlighted as it is read aloud by the computer. Other features allow the child to select a specific word for entire word, syllable-by-syllable, or letter-by-letter pronunciation. The program also features a "find the word" game in which the computer voice asks the reader to find a word included in the text. When the task is successfully completed, the kids are awarded as the word is illuminated and a "beep" sounds. Also, by moving the pointer to a particular section of the illustration, the program will identify the character or object.

The reading rate can be altered as well to suit the reader's skill level. While the default rate is 125 words per minute, the reading rate can be set for anywhere from 40 to 400 words per minute. The program runs on all Amigas with 512K required.

Hilton Android
P.O. Box 7437
Huntington Beach, CA 92615
(714) 963-4584
The Three Bears, $29.95
Inquiry #299

Momentum Mail and Tele Tutor

Micro Momentum Inc. has announced the release of two new software products, **Momentum Mail** and **Tele Tutor.**

Momentum Mail is a full-featured mailing list manager. No longer do you have to buy an expensive database program just to keep track of your mailing addresses. Momentum Mail allows flexible search/print functions including wildcards. You can even use your Momentum Mail files in other database programs.

Tele Tutor is an interactive telecommunications tutorial that covers all aspects of telecommunications, including bulletin board systems, networking, file transfers, modem commands, and file compression techniques. Tele Tutor is designed to aid both the beginner as well as the more experienced telecommunicator.

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Inquiry #152

•AC•

PD Serendipity

Insight into the World of Freely Redisributable Software for the Amiga™

by
Mike Morrison

Fred Fish Disk #221

AllocMaster: Allocmaster is a memory control program. It allows you to change the amount of chip memory and other memory available to the system by adjusting sliders for each. The program then allocates the set amount of memory for itself. This is a nice tool to help you test your programs in low memory situations. Allocmaster also has a snapshot feature that you can use to take a picture of memory before and after a program runs. You can then assure that all memory being allocated by a program is being returned when it is done. Version 1.17, binary only. Author: John Gerlach Jr.

ANSIEd: This is a demo version of an ANSI screen file editor. It allows you to create and modify a screen of ANSI-style text/graphics on the Amiga. The program has the standard ANSI color set and text styles (plain, boldface, underlined, italic) provided, along with some editing and drawing functions. This demo version has the save features disabled. There are a few sample files provided for you to look at. Version 1.2.0aD, binary only. Author: Gregory Epley.

BallyII: See Expansion Drawer on page 20 of this article.

DFrame: A utility program that multitasks with Dpaint II to help you create animated bobs. You draw your bobs using Dpaint as usual. DFrame allows you to set different parameters regarding the posistion, playback rate, etc about your bobs. Then DFrame will animate your bobs so you can preview them on the spot. DFrame will save you time and frustration if you need to animate bobs. The only problem is finding that old copy of Dpaint II. Version 1.02, binary only. Author: Jan Buitenhuis.

IFFM2: Demo version of an IFF support module for Interface Technologies M2Amiga Modula-2 system. Includes a version of ViewILBM (with source) that uses the IFF support routines. If you accidently try to view something other than an IFF picture, be prepared to be visited by the Guru. Version 1.0, binary only. Author: Gregory Epley.

Steinschlag: This is one of those games that is simple in concept and game play, but is very addictive. You have to play this game "just one more time" because if you don't like your score, you know that it is because you made a stupid mistake. The text is in German (I think), but the game is self-explanatory. Version 1.5, binary only. Author: Peter Handel.

Fred Fish Disk #222

MemGauge: This program brings up a fuel guage that measures the amount of RAM available. When I first ran this program I didn't notice that it had a menu bar that allows you to change certian options as well as close the guage. I thought I was going to have to re-boot to remove it, so I decided to see how many I could have running at once. After I had over one-hundred fuel guages running, I gave up. Version 1.4, includes source. Author: Olaf 'Olsen' Barthel.

Mischief: This program provided many laughs when I used it and showed it to a few friends. Don't forget to have your sound cable conected and volume up. The digitized laugh is excellent and is perfect for the little tricks the program plays on you. It uses the input.device to perform its various acts of mischief. Includes source. Author: Olaf 'Olsen' Barthel.

Plplot: A library of C functions useful for scientific plotting on the Amiga. The library is Lattice C compatible. Contour plotting, three dimensional plotting, axis redefinition, log-log plotting and multiple subpages are a few of Plplot's features. The plots can be displayed on a monitor or sent to a graphics file for subsequent printing. These files are zoo'd because of their size. Zoo is in the c directory on this disk. The docs are written in LaTeX format, so you need AmigaTeX to use the docs, or dump the plotdocs.ps to a postscript printer. Version 1.00, includes source. Author: Tony Richardson.

Fred Fish Disk #223

Csh: A modified version of Matt Dillon's csh like shell. Includes new filter commands, dir option, editing options, sourcing of a standard startup file, and bug fixes. Version 3.03 aan update to V 2.07 on Fred Fish #199, includes source. Author: Matt Dillon, Steve Drew, Carlo Borreo, Cesare Dieni.

Paccer: A pacman like clone with a game screen editor. The editor does not save in this version. This is version 1.0, shareware, binary only. Author: Dirk Hoffman.

FixDisk: A program that tries to recover as much data as possible from a trashed disk. It can sometimes recover damaged (unreadable) tracks, check file integrity, check the directory structure, undelete files, copy or show files, fix corrupted directory pointers, etc. Allows all options to be selected from an Intuition interface. Version 1.0, binary only. Author: Werner Guenther.

GravSim: Using GravSim you can create your own mini-universe. You can place up to 6 planetary masses any where on the screen. Then you set the mass and initial velocity of each and let GravSim take over. GravSim will animate your mini-universe through time and show you the paths of each planetary mass with a trail. There is even a record/playback feature to capture the animation of your universe. Version 1.50, includes source. Author: Richard Frost.

PopInfo: This program pops open and displays information that WorkBench doesn't. PopInfo shows you the devices that are mounted, the number of bytes available, used, and free. It also shows errors, write protect status, the type of bootblock, free RAM, and a clock. This is version 3.0, an update to the version on disk 204. Includes source. Author: Jonathan Potter.

SetCPU: A program that reports information concerning which CPU is being used, if there is a math co-processor available, etc. It also allows you to transfer the OS to RAM and restart the machine using the new RAM-based OS. This would be handy if you get a copy of V 1.4 kickstart and wanted to run your machine with it. SetCPU also allows you to set different parameters regarding things like burst rates, data catches, and MMU's. This is version 1.5, an update to version 1.4 on disk 187. Includes source. Author: Dave Haynie.

Iff2Sun: A small utility that takes an Amiga IFF file and converts it to a Sun rasterfile format. This version is an update to the version released on disk 174, with better parsing, support for HAM mode, and some bug fixes. Source only, as the program needs to be recompiled and run from a Sun. Authors: Steve Berry, Mark Thompson.

IFFtoSUN: This program takes a standard IFF format image and translates it into a SUN rasterfile format, like the Iff2Sun program also on this disk, but this one runs on the Amiga. Version 1.31, includes source. Author: Richard Frost.

Fred Fish Disk #224

CLImax: This program will give you a 25 lines of 80 column CLI. You must use Conman with CLImax, available on Fred Fish disk #165. CLImax will make your CLI a Shell if you have Shell-Seg resident. MoveSys is also included which reassigns SYS:, C:, S:, L:, DEVS:, LIBS:, and FONTS: to a new volume with one command. Includes source. Author: Paul Kienitz.

KickMem: A nice program for A1000 hardware hackers that have done the Amazing Computing 512K upgrade. KickMem will patch your 1.2 or 1.3 kickstart disk to perform addmem during kickstart. This allows warm boot surviveability of ram disk devices and eliminates addmem commands from your startup sequence. Version 2.0, includes source. Author: Dave Williams.

MoreIsBetter: These two hacks work with More. One is called V; it's a small "pure" CLI command that acts as a front end for More, causing it to create its own window. The other is Fenestrate, which alters the CON: window parameters inside More enabling it to, for instance, use ConMan features to create a borderless window on the topmost screen. Includes source. Author: Paul Kienitz.

PetersQuest: A game where you control a character named Peter. Your job is to rescue Daphne, your love, who has been kidnapped by Brutus. There are twenty levels of hearts, porcupines, and other dangerous goodies. Version 1.0, binary only. Author: David Meny.

Who: This program gives you information about what tasks are running in your

Expansion Drawer

A few readers suggested that we give more details about one or two of the programs that come with the Fred Fish collection. Each month I will take one program and talk about it in more detail than normally.

Bally II Fred Fish disk #221

The Contents file on the Fred Fish disk says "Amiga port of the former arcade game named Click", I don't remember ever seeing this game, but it did remind me of the arcade game Qix. The idea of the game is to capture 75% of the screen by moving your player (one pixel) with the joystick. Once you enclose a certian are of the screen it gets colored. But beware of the enemy. There are two border patrols and two area patrols. The border patrols kill you if they run into you. The area patrols bounce around in whatever area you haven't captured. They can kill you by hitting any part of your trail while you are capturing part of the screen. After each round both area and boarder patrols are increased by one and you start over with a blank screen. The only other way to die is by turning back on the line you draw while trying to capture part of the screen.

There is a high score screen, digitized sounds, start-up music, and some neat effects when you exit (ESC key). The digitized voice and instructions are both in German. I can't read German (the game is pretty much self-explanatory), but it looks like the game was written in assembly language. This is a fun game, and you can't beat the price (don't forget: if you use the game, please remember this game is shareware).

The contents file also says that "This version adds a "cheat" mode" which I didn't find. This is version II+, an update to the version released on Fred Fish disk #205. It has binary only and is shareware written by Oliver Wagner.

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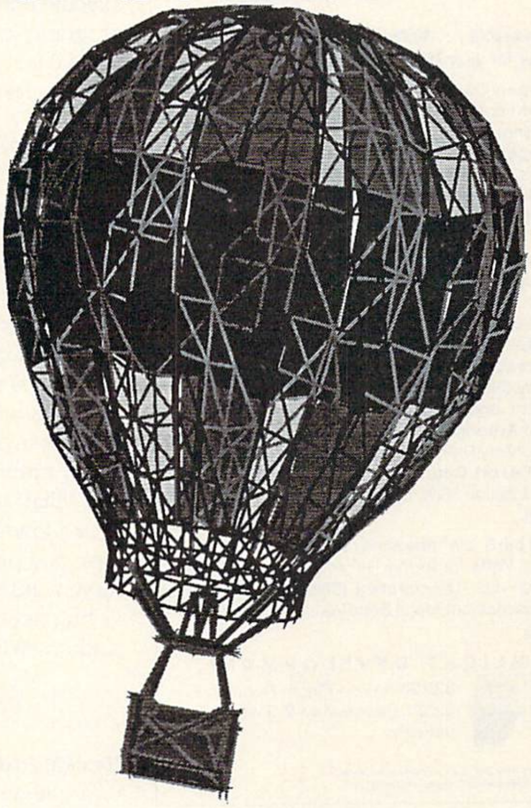

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system. This is an update from the one found on Fred Fish disk #79. Includes source. Author: George Musser, rewrite by Paul Kienitz.

Xebec: If you own a Xebec hard disk, here are a couple of hacks that will help speed things up for you. One makes it more possible to Mount a Xebec hard disk with the Fast File System and the other is a compact head parking program. Includes source. Author: Paul Kienitz.

Fred Fish Disk #225

AmigaTCP: I am not familiar with sending information over radio waves, so I have used the description from the disk. This is the KA9Q Internet Software Package. The package supports IP, ICMP, TCP, UDP, and ARP as basic services, and implements the FTP, Telnet, and SMTP protocols as applications. It runs on IBM PC and clones, the Apple Macintosh, and the Amiga. Includes source. Author: Bdale Garbee, Phil Karn, Brian Lloyd.

MyMenu: This program lets you add your favorite commands to a menu that gets connected to the WorkBench screen. MyMenu will allow you to execute both CLI and WorkBench programs, and is configured with a normal text file. Includes source. Author: Darin Johnson.

Fred Fish Disk #226

Vlt: VLT is a VT100 emulator and a Tektronix (4014 plus subset of 4105) emulator. You will need the Arp library in your LIBS: directory to use this program. XMODEM 1K/CRC and Kermit protocol support also included. This program is an update to the one available on Fred Fish disk #202. New features include support for other serial ports, external file transfer protocols, and "chat" mode. Tektronix emulation now allows saving IFF files, PostScript files, and printing bitmaps to the printer. More features have been added, as well as bug fixes. Version 4.036, binary only. Author: Willy Langeveld.

Fred Fish Disk #227

RexxMathLib: A library that allows you to use math functions like sin, tangent, log, etc, from ARexx. This library will save you the hassle of writing these functions yourself. Version 1.2 and 1.3, binary only. Author: W.G.J. Langeveld

RexxArpLib: This library started out as an interface between ARexx and the Arp library. It has been extended to over 50 functions that act as an interface to Arp as well as Intuition. It includes a file requester, string/boolean requester, environment variable functions, simple message window, wildcard expander, etc. This is version 2.3, an update to version 2.0 on Fred Fish disk 178. Binary only. Author: W.G.J. Langeveld.

MidiLib: A disk based library that permits sharing of the serial port by MIDI applications through a MIDI message routing and processing system. The midi utilities include a midi monitor to display incoming midi messages to the console, a routing utility, a midi library status utility, and more. This is version 2.0, an update to the version released on Fred Fish disk #101, and includes significant speed enhancements, new utilities to play with MIDI files, and updated utilities, documentation and examples. Binary only (source for examples and bindings however). Author: Bill Barton.

PickPacket: This program lets you play around with packets. The program displays the DosPacket structures that are sent, and will display the results. You can also perform handler operations such as open files, read/write data, Examine or ExNext locks, etc. Version 1.0, includes source. Author: John Toebes and Doug Walker.

Fred Fish Disk #228

Az: A well layed out, nice looking editor. It doesn't have all the bells and whistles, but it has all the necessities. Az lets you iconify the program, and then click on the icon to return to the editor. It also has an UNDO command. Az can be started with a small requester that allows you to do all operations without using the mouse. Version 1.40, binary only. Author: Jean-Michel Forgeas.

JazzBench: A multitasking replacement for Workbench. It seems to have many of the features that are scheduled to be in Workbench V1.4. It allows you to extend it, add your own menus, key shortcuts, etc. This is alpha version 0.8, binary only. Author: David Navas.

Glib: A text screen oriented librarian and editor for synths. Supports the TX81Z, DX100, DEP5, DW8000, and K-5. Includes source. Author: Tim Thompson, Steve Falco, and Alan Bland.

Xoper: This program allows you to monitor and control system activity. Monitor cpu, memory usage, interrupts, ports, devices, close windows, screens, show loaded fonts, last Guru code number, clean up memory, flush unused libraries, devices, fonts. etc. A very handy background task to have loaded. This is version 1.3, an update to version 1.2 on Fred Fish disk #171. Assembly source included. Author: Werner Gunther.

Correction

Oops!: Last month I accidently referred to Fred Fish disk #218, as disk #118. It really is #218 and I apologize for any inconvenience this may have caused.
-=MM=-

SNAPSHOT

Four Amiga Game Reviews

by R. Bradley Andrews

The future looks good for Amiga action game fans. Many new conversions are on the horizon, and most promise to maintain the arcade standard for graphics and sound . While most will require a full megabyte of memory, the cost should be worth it. But now, on with the show.

Hostage Rescue Mission

First on this month's list is Hostage Rescue Mission. Originally developed by Infogrammes in Europe, it is distributed in the U.S. by Mindscape.

International terrorism is alive and well. The U.S. embassy has been stormed and its workers taken hostage. You must lead an elite team of six commandoes in an attempt to secretly penetrate the building, free the hostages and bring the terrorists to justice.

You will start as a Lieutenant, but successful game play will let you advance to the Captain and Commander levels. As you would expect, at each level the missions are more difficult to add challenge to the game. Within a level, missions also vary in difficulty. The harder the mission, the less time your team has to successfully complete it. To simplify things, the first scenario, Training, has no hostages so you can focus on fighting terrorists.

Game play is divided into two basic parts. The first involves placing sharpshooters at various locations around the embassy. They are so macho that they insist on moving into position while dodging the terrorists searchlight beams, so this process can become tense at times.

Traveling down the street can also be dangerous. Fortunately, the terrorists can only shoot what they see. By carefully avoiding the fixed pattern of the many searchlights, a skillful player can use dives and rolls to throw off the enemy's aim. Team members can also dodge into windows and doorways for temporary protection from the probing beams.

Once all three marksmen have either moved into position or been slain by terrorist snipers, you can send in your three man assault team to storm the embassy. The team begins on the roof, where they must rappel one by one down the side of the building, carefully timing their fall to smash through one of the windows and swing into the building. Once the player is in the embassy, he must maneuver through the many rooms, shooting any terrorists encountered. Hostages must also be led, one at a time, to a safe room on the third floor, from here they will be taken to safety.

During this stage, the player can quickly alternate between any of his available team members. The outside marksmen can be used to quickly scan the windows to identify possible locations of terrorists or hostages. They can also shoot out the windows, aiming at any people inside. This is dangerous, though, since you can accidently shoot a hostage or even a team member.

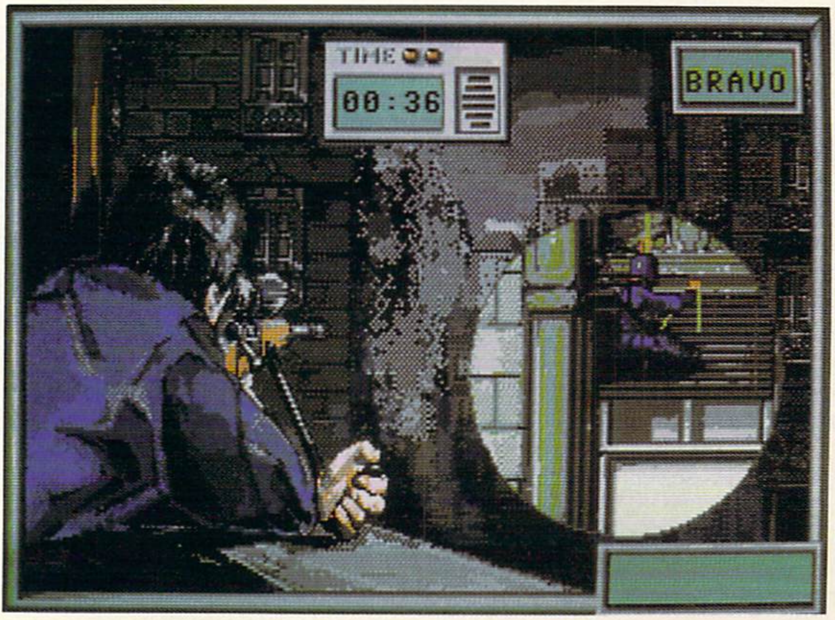
In the embassy, an overhead view of the current building level is displayed. Lieutenant level shows all people on the level, team members as red arrows, hostages as white dots, and terrorists as red dots. On the higher game levels these dots are only shown when you are in the same room.

While each team member is a skilled professional, none will act without your intervention. It would have been nice if the members would at least defend themselves and guard any areas they are facing. As it is, so much attention must be placed to each member that it is often good to just drop one member into the building and let him clean it out single-handedly. Bring in another member only if the first man is killed, or, if needed, to guard the hostage safe room.

While each level can be replayed as many times as desired, there is no key available to abort the current level and restart it. This feature is desirable, because losing even one man causes your mission to fail. Often, I had to kill off the remaining team members so I could retry the level and attempt to complete it without losing any men.

Figure One

Team member Bravo bags a bad guy



The graphics are well done and realistic. You can almost feel yourself hopping over the wall or ducking down the hall. The sounds are limited, but more than adequate. Some nice touches are included, terrorists scream as they are shot, and your vision blacks out if you are shot. The joystick is used for all control and is fairly effective, though it does take a bit of practice to get used to its use in the embassy section.

On the whole, Hostage Rescue Mission can be enjoyable. The basic game mechanics are easy to learn. The Lieutenant level is sufficiently easy that I performed well after only a short time. But the higher levels should remain challenging. It is extremely frustrating to be blasted just as you walk in the room, but careful practice will almost make you an expert team leader. The limited theme does limit replay value, but on the whole the upper levels remain challenging and should please many game players.

Combat Course

You have just been drafted, and off you go to boot camp and Midscape's Combat Course. Here, a wonderful drill instructor will turn you into a lean, mean, fighting machine. Your goal in training is to master the five different courses. The first three each cover one of the basic skills you will need. The Physical course tests your ability to scale brick walls, crawl under barbed wire, and avoid guard dogs. Next comes the Risk course, with fewer obstacles, but more danger. You must lay dynamite and throw hand grenades, and the course is littered with land mines that can easily do you in.

The final basic course is the Combat course. Here your hand-to-hand and rifle skills will be honed to smooth efficiency. The two final courses combine all three skills in one intense experience. The combined course is the easier of the two and simply involves running the first three courses consecutively. The final is the Cobra Construction Set. This is an even more intense course with sufficient challenge and non-stop action to keep even the most skilled recruit humble.

Play in Combat Course is centered on the Options Screen. The bottom is an area that looks like the front panel of a VCR, with the top area used for visual feedback, including the actual running of the selected course. The reason for the similarity to a VCR is that many of its controls are used by the Instant Replay option, allowing the player to run through a video tape of the most recent course attempt. While not entirely necessary, it does add a nice feel to the game and can be useful in learning the course's layout.

Another useful feature of the game is the inclusion of a Course Construction Set. Here a player can construct any course, tailoring the obstacles to his own particular desires. All the various types of obstructions are available and the only limit is the player's imagination.

Other available options include the ability to change players names, view players scores, save/load replays, save/load courses, and save/load high scores. The last should really have been done automatically. A separate action should not be required to enable the saving or recalling of the high scorers. The joystick is used for all game control. While it works fairly well in most cases, the necessity to change between many modes during game play can sometimes get confusing.

For example, when in fighting mode, moving the joystick causes various kicks or punches, and only by pressing the fire button will the player be sent back into movement mode and allowed to proceed. The designers did avoid using diagonals for separate actions, making control a little bit easier. The graphics compliment and game play are comparable with most other Amiga games, providing a good feel for the on screen action.

Part of the included manual contains a kind if induction speech from the drill instructor. The rest covers the various courses and game mechanics.

Combat Course is the kind of game that likely has a limited audience. While play is relatively smooth and enjoyable, real challenge seems lacking. The player never truly dies, time simply runs out on

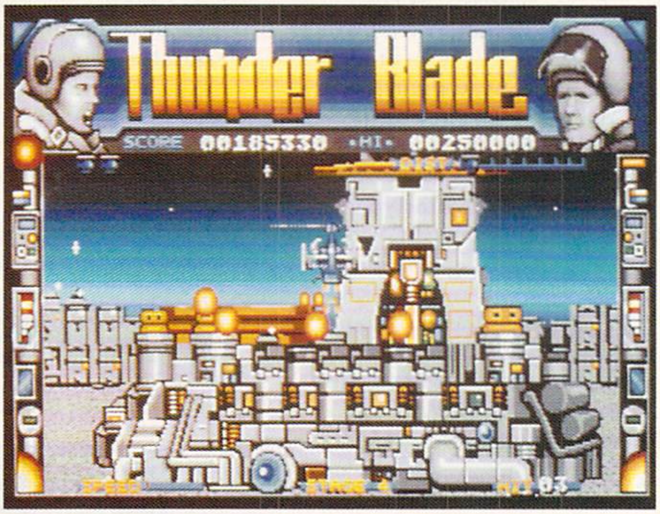


Figure Two
Fly the world's most powerful helicoptor to take your country's ground and skies

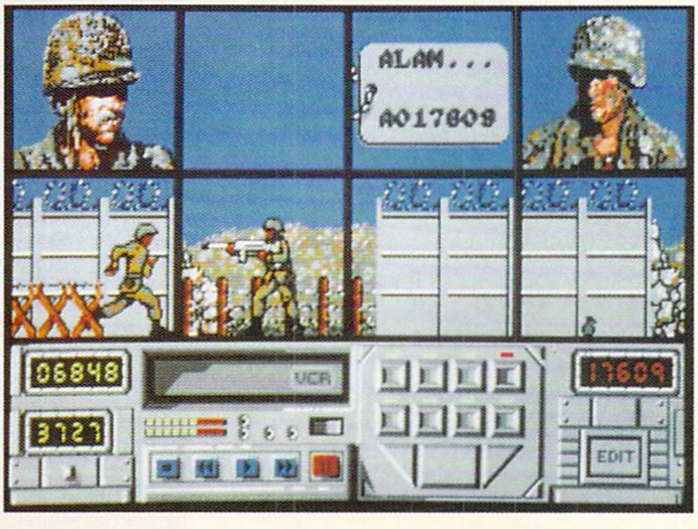


Figure Three
Whip yourself into shape on the combat course

the course. The theme just does not, in my opinion, hold as much gravity as blasting a real enemy in a real war.

Mind-Roll

Next on the list is Mind-Roll, by Epyx. Similar in appearance to Marble Madness, this game features an eyeball which a player must guide in its quest to accomplish several predetermined quests in ten different dimensions. You can attempt these planes or dimensions in any order, and players must accomplish a different set of tasks in each plane. Once tasks are completed, an exit area becomes available which the player can roll onto in order to close the plane.

Tasks range from simply destroying all the obstructing blocks on the level by colliding with them to finding all the keys hidden about the plane. Many times, certain objectives must be accomplished before others become possible. Sometimes collecting a key will open a corresponding door, allowing access to other sections of the plane.

The main opponent is time. A fixed amount of time is allowed to complete each level. While leftover time can be carried on to later planes, each subsequent plane allows less time to complete it, requiring more speed from the player.

Each level also features its own special obstacles. While some are invisible walls that can make negotiation of the board extremely difficult, most are visible and can be avoided with a little care. Obstacles include walls and pipes that block movement, death symbols that instantly kill off your eyeball, transporters that will instantly beam you to another spot on the plane, electric seas that will quickly drain away your life force, and platforms that can raise or lower the elevation of your eyeball.

The platforms can prove useful, enabling your eye to sail right over other intervening obstructions.The joystick is used for all game controls and works fairly well. The graphics are well drawn and also add to the feel of the game.

The game falls short in two areas. First, several planes are nearly impossible to complete. One contains a suction system that is activated if the keys are picked up in the "wrong" order. The problem is that there is no clue as to what correct order is. So the suction usually kicks in early in the game, eliminating any chance the player might have had to complete the level. Plane One supposedly features a vertical run, followed by a drop to several subplanes. But when attempted, a player's entire life time is spent rolling up the screen, never reaching the path to the sublevels, but simply dying as time runs out.

I may have missed something, but the sparse rules indicated no way to reach the sublevels and complete the plane. While there may be some way to complete this plane, putting it first in the sequence may discourage many players from trying the game any further. The other problem I have with the game is its occultic overtones. Many of the symbols in the game and opening screens features symbols that have an eerie similarity with Egyptian mythology that does not sit well with me. While this may not bother many people, it pervades the game and should be taken into account by potential purchasers.

Thunder Blade

Next is Thunder Blade, by Sega. Your enemies have surrounded the cities, infiltrated the forests, and filled the canyons. Flying the world's most powerful combat helicopter, you must eliminate the enemy from the ground and skies of your country. Only then can you take the battle to the enemy himself and destroy his offshore base, forever ending the threat to your homeland.

An interesting twist in Thunder Blade is the use of both overhead and forward view perspectives. Some missions are flown while looking down on the opposition, while others actually have your aircraft flying straight at the enemy. Both views have different benefits and drawbacks, and require slightly different skills to master.

Other than the perspective change, game play is basically the same as that in most shoot-em-ups. The main idea is to maneuver quickly and shoot as fast as possible to destroy targets on your way to the final objective. The graphics are arcade quality, and they provide a nice backdrop for game play. While the joystick works reasonably well as the controller, it seems sluggish in some of the levels. Add to this the seemingly unpredictable enemy fire, and the game can be extremely frustrating at times. Often, it will seem you are flying safely, only to suddenly be shot down by an aggressor appearing from nowhere.

At other times, so many shots approach that there is no way to avoid being destroyed. While Thunder Blade can be enjoyable at times, the awkwardness of its controls hinders its true value and I would recommend one of Sega's other titles instead. This game is OK, but there are better ones available.

Author's Note

On a closing note, I would like to respond to a sentiment I saw in a recent letter to the editor that may be shared by many readers. The writer alleged that game reviewers would never put down a game for fear of being cut off from receiving review copies of new products. While I cannot vouch for all reviewers, I am in no way afraid of alienating a games publisher. I try to call them as I see them, and I have had publishers angry with me on more than one occasion. Manufacturers may not like to receive a negative review, but they generally realize that it will sometimes happen, especially if the game is not of the highest quality.

I do, however, sometimes hype a game that—when I look back several months later—may not have deserved it. Why is this? As far as I can tell ,it is because I—and other reviewers— like games so much that we try to find the good in nearly every game that we play. Thus, we can sometimes gloss over the rough edges because of our enjoyment of the game overall.

Tastes also differ between different players: one player's favorite might be on the bottom of another's list. This focuses us on the need for a local computer store where the games can be tried before they are bought. While stores are not as cheap as some mail order operations, this hands on testing should easily pay for the cost difference if even one dud is avoided.

•AC•

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Hostage Rescue Mission, $44.95
Inqury # 185
Combat Course, $39.95
Inqury #186

EPYX
Mind-Roll, $29.95
Inqury #188

Sega
Thunder Blade, $49.95
Inqury #187

International SOCCER

review by Derek J. Perry

Microdeal's International Soccer is a soccer game with great graphics and a number of likeable playing options. The game is autoloading, requires 512K, and can be played on all Amigas (500's-2000's). I don't think I have come across a game with as many player options. You can play one to three players against the computer, or one-on-one, one-on-two, or two-on-two. Other options include team color choice, field conditions (wet or dry), wind (and direction) or no wind, formations choices, night or day games, and time per half—an impressive list of options that are incorporated into the game very well.

Gameplay

At the start of the game, you must choose the skill level at which you want to play. The ball's speed increases at different levels, with Level One being the slowest and Level Nine the fastest. The skill level also determines the quality of the computer team's passing and defense. I started at Level One and was able to defeat the computer at least 50 percent of the time up to Level Five. From then on, the computer's team dominated play, scoring three or four goals to my one.

The game clock moves along at about three times normal rate of time. During gameplay, you must press "T" on the keyboard to see the game clock. This will also display the score, half, and field conditions. I found this distressing especially in close games with time running out. Otherwise, the only time you see the time is after a goal is scored.

Soccer fashions

Team uniforms can be chosen from a wide range of colors and shades. Not only do the players wear their colors on the field, but the fans in the stands show support for their team by wearing their teams' colors. But there is no home-field advantage regarding the number of fans. The fans are divided equally between the two teams, with half the fans wearing one team's color and the other half wearing the other. Fans cheer equally loud for each goal that is scored. One last note on uniforms: While I liked the available colors, I would have liked the choice of striped uniforms. I was surprised that option was not available, since quite a few international soccer teams have striped uniforms.

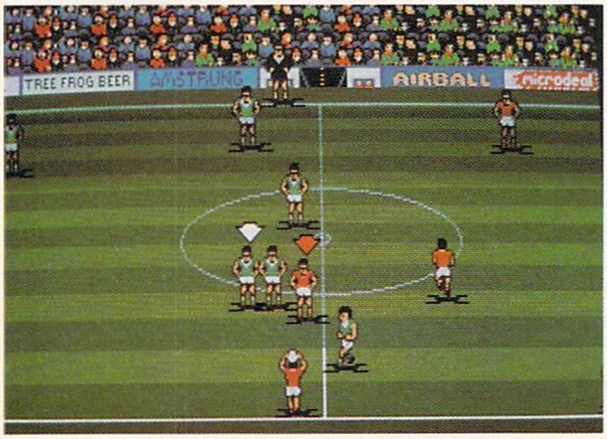
Strategic formations

The formation option allows you to choose your team's field formation. You can only choose the formation at the beginning of the game, so if you chose an offensive formation at the start and then find you must play better defense, you are stuck. On several occasions I wanted to pause the game and change formations, but was unable to do so. However, the option does allow for a few formations that provide a medium between offense and defense.

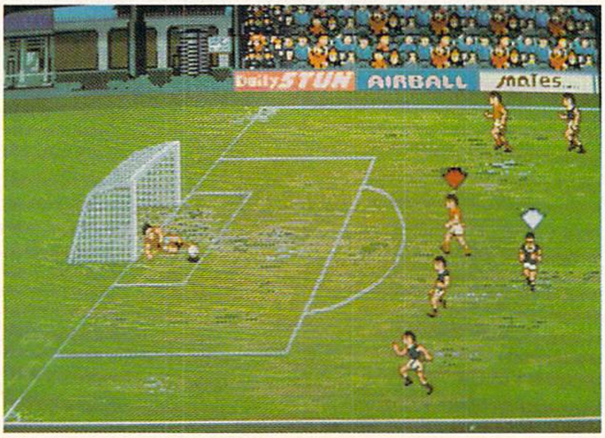
Playing conditions

The options controlling the field conditions are excellent. The wind option gives one team the wind advantage for half the game; the other team gets the advantage in the second half. The wind speeds up or slows down the ball movement. You can also play a game under day or night conditions. Under daylight, the players and ball do not cast shadows on the field; at night, the lights produce small, four-way shadows.

My favorite option is the wet or dry field option. On the dry field, players are sure-footed and never slip. On a wet field, sharp changes of direction cause a player to slip and loose control over the ball. But a wet field also causes defenders to slip, leaving the offensive player



***Left**: A player attempts an over-the-head two-handed pass during a night game under normal conditions.*



***Below**: The goalie dives to make a save on a wet field during a night game. Note the water puddles on the field.*

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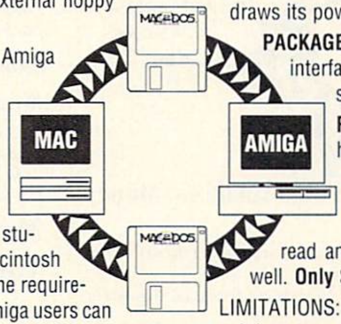

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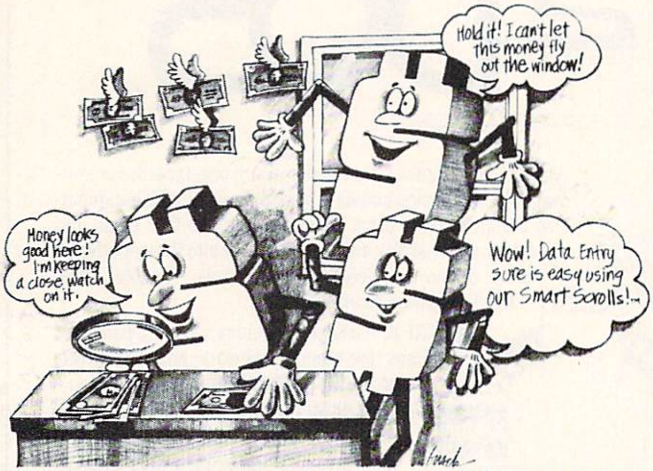
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unmollested. Visually, a dry field is well-groomed and even; a wet field has numerous puddles and a sloppy appearance. Play on a wet field is a little slower, but more challenging because players often slip. It would have been nice if the wet field actually deteriorated and became muddy, and if the players' uniforms became dirty as they slipped or attempted to tackle another player. Maybe this will be added in the revised addition of the game.

On the field

Players look and respond just as real players would. They fall when tackled, they inbound the ball with a two-handed, over-the-head pass, and the goalies dive to make saves at the net. The only element of play that I found missing was the players' ability to head the ball. To kick the ball, press the fire button on the joystick. The longer you hold down the button, the harder the ball is kicked. After a few minutes of play, you will develop the touch needed for passing and shooting.

At lower skill levels, it is easy for even first-time players to weave their way through the defense for a shot. However, at higher skill levels you must pass to teammates more often. Passing is probably the hardest thing to do effectively. A perfect pass automatically gives the receiving player control of the ball. But on a missed pass you must change control of the players by pressing the fire button with the joystick in the centered positon, and chase the ball down before it is picked up by an opposing player or goes out of bounds.

If the ball goes out of bounds or a goal is scored, appropriate windows instantly appear on the screen. After a ball is kicked out of play, it can be put back into play in one of three ways: by an overhead pass on the sidelines, by a corner kick if the offense maintains possession, or by a goal kick if the defense controls possession on the base lines. A direct free kick is awarded for penalties. Tackling a player improperly will result in a penalty. After a goal is scored, the team scored upon will receive a free kick at midfield to resume play.

The only problem I had with the program was in booting the system. When I used the Minimegs two-meg memory expansion, the graphics would come up distorted, and when the options board tried to come up, Whammo!, Mr. Guru would appear. I don't know exactly why this happened, but when I rebooted without the expansion unit, the program ran fine. (The expansion unit worked well with other software.)

Since I am regularly active in athletics, sport games have long been my favorite type of computer game, and as long as they are accurate and fun to play, I am usually happy. Nonetheless, I always want more and expect more from sports games. International Soccer gave me what I expected, and left me wanting a little more. It is fun to play and has my recommendation. It is a most for any lover of sport, especailly a person with a background in soccer. I give it and Microdeal a high five!

•AC•

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Amazing Users Unite

F.C.A.U.G.
The Fairfield County Amiga Users Group
Kevin A. Brook, Secretary
Amiga Users Group
57 North St., Suite 315
Danbury, CT 06810-5638
Phone: (203) 743-1304

Description: At each meeting, we discuss topics, mention events, demonstrate programs, tutor beginners, and sell public domain disks. We also have a newsletter, entitled PIXEL PARADE, and are interested in swapping with other groups.

Meeting: The 2nd Saturday of each month at 5:45pm.

Location: Danbury Hospital Health Sciences Audtorium of Danbury Ct.

BBS: Archives; 2400 Baud; (203) 938-9163; sysop Scott Steinsvaag.

Users Unite Users Unite

CUM-BACC
Commodore Users Medium Baltimore AMIGA Computer Club
Richard L. Williams, President
1427 York Rd. At Seminary Ave.
Lutherville, Md. 21093-6014
Phone: (301) 296-4414

Meetings: 3rd Sunday of the month from 1pm to 5pm.

Location: Meetings are held at various members homes.

BBS: We have a Club Section on the "AMIGABASE". Sysop Joe Tech, (301) 760-2483.

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SMAUG
Southern Maryland Amiga User Group
Vicki Harmon
1866 Bay Street
Huntingtown, Maryland 20639
Phone: (301) 535-3842

Meeting: 1st Tuesday of each month, from 7:00pm to 9:00pm.

Location: Calvert County Library in Prince Frederick, Maryland.

Newsletter: SMAUG Alert, monthly.

BBS: SMAUG sponsors no BBS, but we do call Never-Never-Land frequently, which has a section reserved for SMAUG news; (301)586-3227; sysop Bert Swartzwelder.

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CA-AUG
The Cleveland Area-Amiga Users' Group
Ray Dabkowski, Secretary
2875 Hampton Road #22
Cleveland, OH 44120
Phone: (216) 991-7180

Meeting: 3rd Monday 7-9pm (June - October). 3rd Saturday 2-4:30pm (November - May).

Location: Cleveland Institute of Art "Factory" 11610 Euclid Avenue, University Circle

Newsletter: The Amiga Guru, published monthly.

BBS: 2 nodes; 300/1200/2400 Baud; 24 hours; 80 MB online storage; open to all; sysop Al White.

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AUSI
Amiga Users of Southwestern Idaho
Edwin V. Apel, Jr., President
P.O.Box 691
Boise, Idaho 83701-0691
Phone: (208) 376-1500, evening voice
Phone: (208) 344-6000, day voice
(208)322-5227, 24-hour BBS (Win Apel)

Newsletter: The AUSI Monitor.

Meeting: 3rd Thursday of the month at 7:30PM.

Location: The Conference Center of the Kopper Kitchen, 2661 Airport Way, Boise, Idaho.

BBS: We use both the Greater Boise BBS, (208) 322-5227, and Computers on Line, (208) 338-9187.

The Commodore and Amiga User Group Inc. of Columbus, Ohio
Jo-ann Nemeth, President
P.O.Box 63
Brice, Ohio 43109
Phone: (614) 861-8656

Location: Grace Lutheran Church 4500 Refugee Road Columbus, Ohio 43232. One block east of Eastland shopping center, on the north side of the street.

Meeting: Saturday 10:00am-1:30pm. Monday evenings 6:30pm-9:30pm.

BBS: "New Horizon BBS", on line 24 hours a day, 7 days a week. With 200 meg on line, 8N1 9600 Baud, (614) 861-8656. This is the largest Commodore BBS in Central Ohio.

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Sacramento Amiga Computer Club
Robert Du Gaue, Vice-President
P.O. Box 19784
Sacramento, CA 95819-0784
Phone: (916) 991-220

Description: Founded in early 1986, the Sacramento Amiga Computer Club numbers over 250 members. We publish a monthly newsletter, the Amigazette, and are trading newsletters with several other user groups. We are always looking for other groups to trade ideas and letters.

Meeting: 4th Wednesday of each month.

Location: The Pac Bell Building on 2700 Watt Ave.

BBS: AmigaLink, running Acropolis (Citadel type) 300/1200/2400, 24 hrs. Phones: (916) 447-3842, (916) 447-3843, (916) 991-8553, (916) 682-8872, and (916) 682-8874. Sysop: Lindsey Fong, co-sysops: Robert Du Gaue, Linda Marquess, Barbara Hamilton and Robert Bequette. AmigaLink II- Genesis, running Phoenix 300/1200/2400 24 hrs (916) 387-1328. Sysop Dan Kelly.

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If you would like your users group info printed here please send us a letter.
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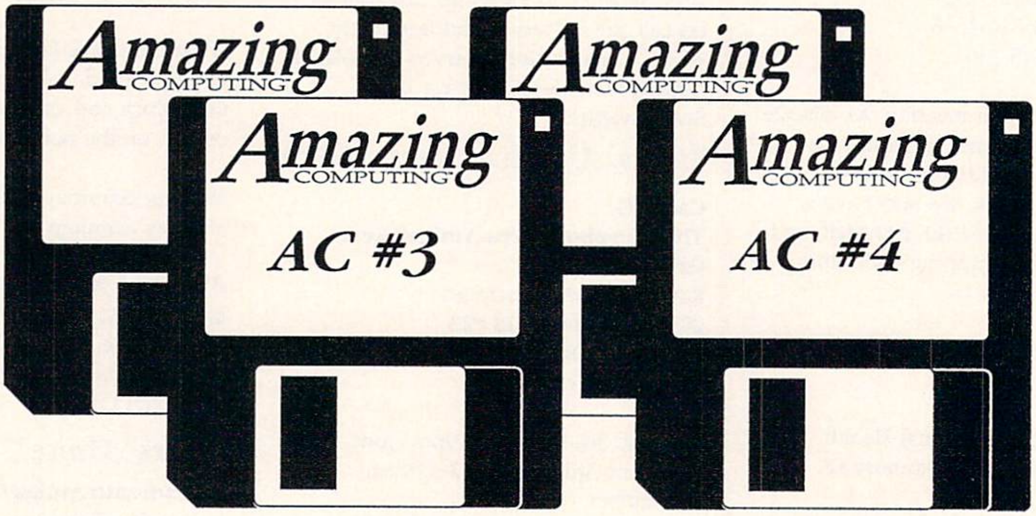


AC #1
V3.8 & V3.9

Gels In MultiForth Part I & II: Using Gels in MultiFourth.
FFP & IEEE: Math routines in Modula-2.
CAI: Computer Aided Instruction in AmigaBASIC.
Tumblin Tots: Save the falling babies a game. Written in assembler.
Extra Goodies: Three freely redistributable programs, VGad, MenuEd & Bspread.

AC #2
V4.4

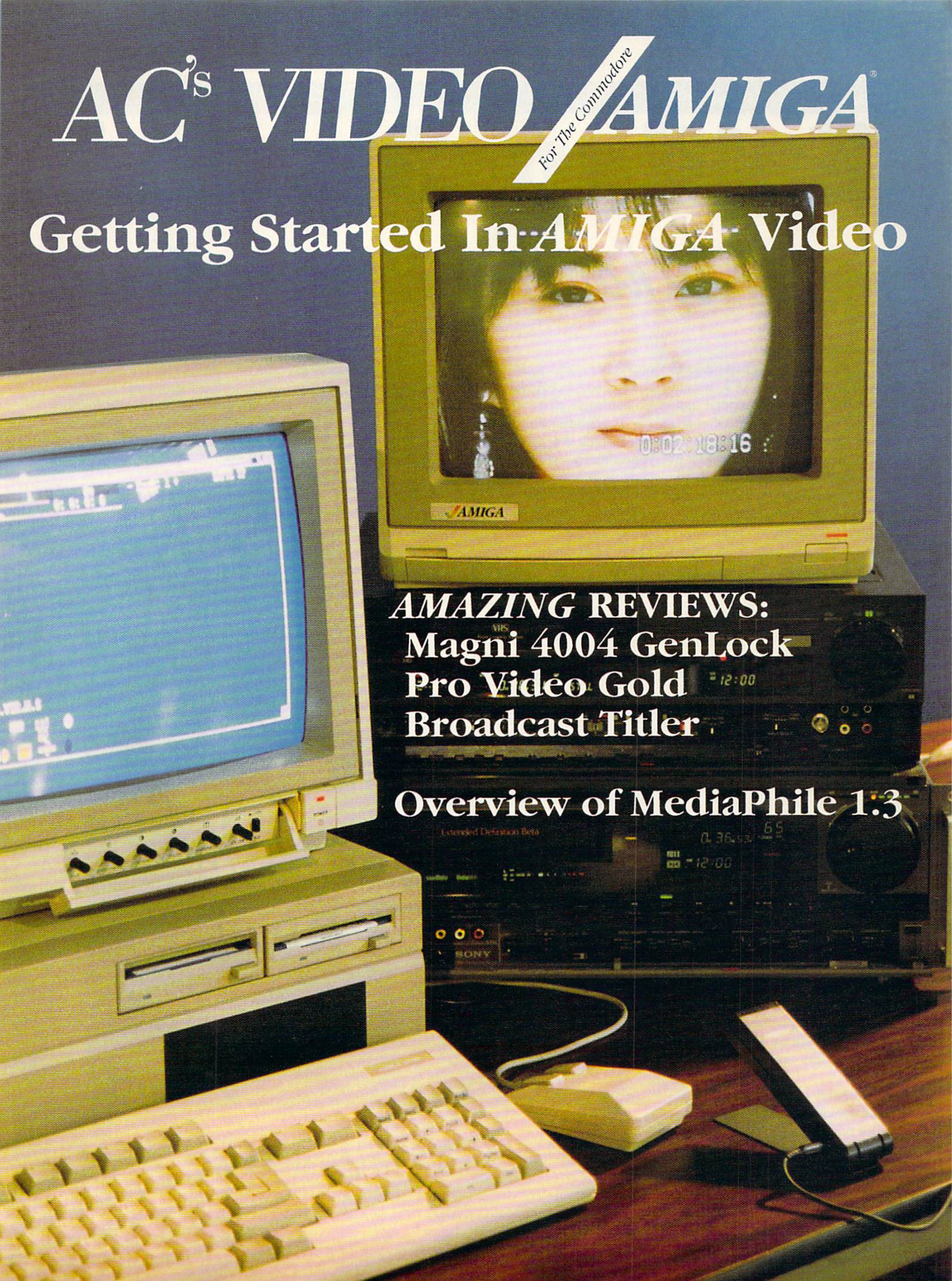
Fractals Part I: An introduction to the basics of fractals with examples in AmigaBASIC, True BASIC, and C.
Shared Libraries: Using shared libraries in C.
MultiSort: Sorting and intertask communication in Modula-2.
Double Playfield: Using dual playfields in AmigaBASIC.
'881 Math Part I: Programming the 68881 math coprocessor chip.
Args: Passing arguments to AmigaBASIC.

AC #3
V4.5 & V4.6

Digitized Sound: Playing digitized sounds using Modula-2.
'881 Math Part II: Part II of programming the 68881 math coprocessor chip using a fractal sample.
At Your Request: Using the system supplied requestors from AmigaBASIC.
Insta Sound: Tapping the Amiga's sound from AmigaBASIC.
MIDI Out: A MIDI program that you can add to. Written in C.
Diskless Compiler: Setting up a compiler enviroment that doesn't need floppies.

AC #4
V4.7 & 4.8

Fractals Part II: Part II on fractals and graphics on the Amiga in AmigaBASIC and True BASIC.
Analog Joysticks: Using analog joysticks on the Amiga in C.
C Notes: A small program to search a file for a specific string in C.
Better String Gadgets: How to tap the power of string gadgets in C.
On Your Alert: Using the system's alerts from AmigaBASIC.
Batch Files: Executing batch files from AmigaBASIC.
C Notes: The beginning of a utility program in C.



AC's VIDEO/AMIGA

For The Commodore

Getting Started In *AMIGA* Video

AMAZING REVIEWS:
Magni 4004 GenLock
Pro Video Gold
Broadcast Titler

Overview of MediaPhile 1.3

Amazing Video How-To

Getting Started

What You Need to Know

by Richard Starr

The good news is that desktop video is here, and your Amiga can be a big part of it. Recent developments in software and advancements in computer and video hardware give anyone the potential to be a George Lucas. If desktop publishing has democratized the printed word, then home video production has put the movies within everyone's reach.

You already have a superb computer, capable of contributing to video production. An Amiga can function as a titler. It's terrific for special effects, animation and all the other exciting new possibilities you've been reading about. You can put it to work in audio production, an application I've just begun to explore. It is almost essential as a tool for logging, scripting and record keeping.

You don't absolutely need an Amiga to do desktop video, but it sure helps in lots of ways. You can, in fact, generate interesting video entirely on the Amiga, without benefit of a camera or editing facilities, so you don't need to know much about video equipment.

All is not roses in home video. Desktop publishing really does come up with work as good as that done on professional hardware, but in video the same is not true. The amateur-affordable formats, VHS, Beta and 8mm, with their upgraded equivalents, S-VHS, ED-Beta and Hi-Band 8mm, are nowhere near the standards required for broadcast. Amateur VCRs put up a pretty good picture, but next to a professional format machine anyone can see the difference.

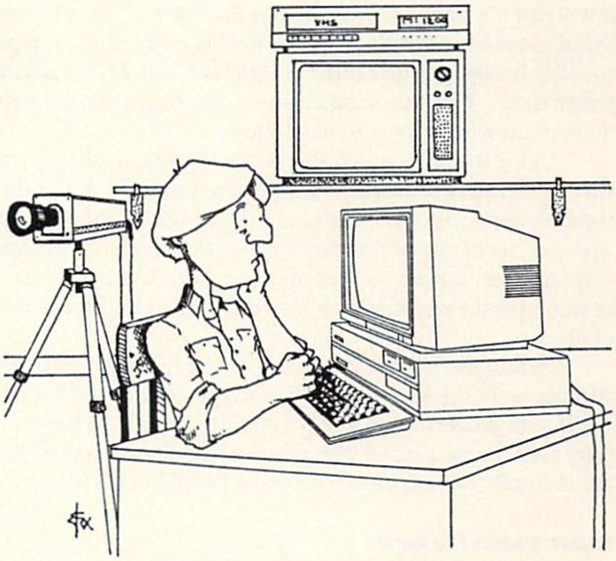
Probably the most serious deficiency is the amount of picture quality lost when you copy amateur-format tapes. The best pro systems can still look pretty good after ten generations; ours are mud after three. For desktop producers, the first generation is the original footage, the second is the edited master, and the third is the distribution copy. So you see, we just make it in under the wire. Things are getting better quickly, but it will be years before you can produce a documentary for Public Television at the desk in your den.

Even with its technical limitations, I find that there is a strong and largely untapped market for creative small scale video production where real money can be made. I've done fund-raising videos for non-profit agencies in our community. I hope to be working on some pieces for use in local schools, funded, with luck, by educational grants. There are organiza-

Above

The studio of a desktop video guru

in Video



tions that will distribute such videos if they are good, even though they were produced in non-professional formats. The key to making it work is quality production.

A guy like me is no threat to professional video producers. Our local professionals must get about $1500 per minute of finished footage. They have every right to charge big bucks. There is very expensive equipment to pay off, there's studio overhead, and video is their full-time bread and butter. And, they deliver an excellent product.

In contrast, my entire video ensemble cost less than one of their professional cameras. I work at it part time, and I make my meat and potatoes elsewhere. Obviously, I can afford to work for far less than they must charge. My clients don't require video that meets broadcast standards. Usually, all they need is half a dozen copies to pass around to prospective donors, customers or classrooms. And there's no way they could afford to pay the big time freight. That's why I'm not in competition with the fast lane professionals. I do work they would never get. Work that would otherwise not get done.

The acclaimed photographer, Ansel Adams, could have made superb pictures with a box camera. You can work to high professional standards, even within the limitations of today's desktop equipment. All it takes is taste, imagination and good sense to produce work that people will appreciate without reservation. If you do; they'll be willing to pay for it.

I've learned that just as you don't need to be a programmer to use your Amiga, you don't need a heavy techie background to produce good video, but you need to know what you're doing. You need a guide to the tangle of nuts and bolts to know what equipment is required and to have a clear, accurate idea of how it works. I've had to learn the ropes in bits and pieces, because most sources of information, magazines or books, are either too technical or too elementary. In these articles, I'll try to give you the lay of the land in desktop video as I've learned it. Much of it will not relate to the computer, but video is a large part of our Amiga's considerable talent. Knowing just the computer isn't enough to get started. Here's the rest of the story.

Formats

Deciding which video format to work with is like choosing among computers: Apple, IBM, or Amiga? In video, the best choice is less obvious.

There are many video formats available, but we're talking consumer not professional. That leaves us with VHS, Beta and 8mm. Beta and VHS both use the same half-inch wide tape, but there are differences in the cassettes and the method of recording. Beta is said to put out marginally better quality than VHS, but it is almost defunct as a popular system, while plain vanilla VHS recorders are as common as refrigerators. 8mm, recorded on tape much narrower than VHS or Beta, is a minor part of the market, but gaining because 8mm camcorders are tiny and weigh next to nothing. There is editing equipment available in each of the three basic standards.

Which format is best? My experience is with VHS, but I haven't done side by side comparisons. Besides, to compare fairly, you'd need to use the absolute best equipment in each format, tuned to perfection. And then you'd need super technical equipment to find the real differences. I can only judge by what I've heard and read. As far as I can tell, the differences in actual quality among consumer formats are quibbles, especially when compared to professional equipment. Comparing formats by performance isn't the answer.

All three formats have come out with enhanced versions, known as Super VHS, ED Beta and 8mm Hi-Band. These are capable of producing horizontal resolution of better that 400 lines, compared to under 200 for the original systems and broadcast TV at 300. In fact, it's better than most consumer color cameras can manage.

In video, the numbers for horizontal resolution don't mean the same as on computers. Television screens, like computer monitors, are not square. They are wider than they are high in a ratio of 1.33 to 1. TV folk want to make the figures for horizontal resolution represent the same degree of sharpness as those for vertical resolution. To do this, they count the number pixels in the length of a horizontal scan line equal to the height of the screen as though the screen were square.

Video resolution is actually measured by pointing a camera at a test pattern which has two identical fan shaped rasters, one horizontal, the other vertical. When you can barely see the lines in the fan, that's the resolution. (There's a lot more to it, but that's the general picture.) Computer folk, on the other hand, need to keep track of frame proportions and memory requirements, so for them horizontal resolution is the full number of pixels their machines produce on a whole scan line. That is the big difference between video and computer resolution numbers.

So in terms of computer resolution, those new formats can put about 530 pixels across the screen [400 x 1.33], while your living room tube is doing well at 400 [300 x 1.33]. In comparison, the Amiga produces 640 in High Res and we consider that pretty sharp. You can see that those new formats are actually quite good with respect to resolution.

Color is still recorded the same old way, therefore color sharpness is still well below professional standards. But the super systems also do a better job of separating the 'luma' and 'chroma' segments of the video signal, which results in cleaner color and lets signals survive multigeneration copying. For desktop producers, that may be the most important advantage of ali.

Part of the trick is the use of a new recording tape which accepts higher frequencies, but this tape costs about four times more than grocery store video cassettes. Enhanced format camcorders cost around 25% more, and editing systems for them are currently too expensive for most people to consider.

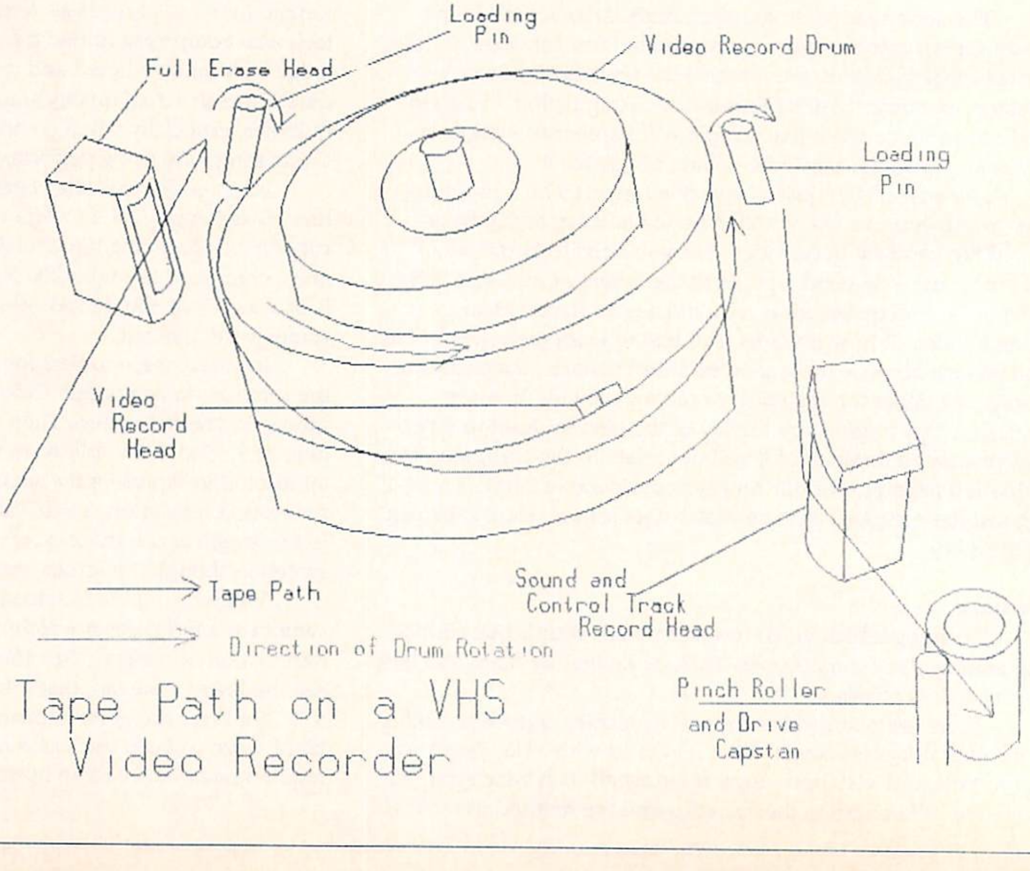
Super Video Formats

The 'super' formats are a genuine advance, but they still suffer from the same amount of Time Base Error as their parent formats. TBE, visible as wiggly vertical lines in the picture, is the result of small speed variations of the mechanical parts of the video recorder. It's the video equivalent wow and flutter in sound reproduction, and every VCR has it to some degree, even 2 inch professional models. Every time you copy a tape, new TBE is added atop the old. Time Base Error makes accurate editing difficult and causes titles genlocked over such video to distort or flicker. Help is coming soon.

The good news is that desktop video is here, and your Amiga can be a big part of it...If desktop publishing has democratized the printed word, then home video production has put the movies within everyone's reach.

Consumer priced Time Base Correctors (TBCs) are about to hit the market and, using them with the super formats, home produced video may soon begin to approach minimal professional standards. It will increase the present standards for home production video. Home TBCs will also make true A/B editing—mixing the output from two VCRs—available to desktop producers. We'll be able to do dissolves and all kinds of other effects. To me, that's the most exciting news yet.

There is plenty of competitive volatility in the video game, so which format will win, and for how long will it reign, is a critical question when buying expensive tools. Most newly introduced electronic equipment comes down in price with public acceptance due to increased production. In a couple of years, beginners will probably find super formats affordable, but they will still be an expensive upgrade for part-timers like myself. We won't just have to replace our VCRs. To reap the full benefits of the format, most video processors, including genlocks, will eventually have to be replaced or rebuilt (there-are several S-VHS compatible genlocks avaiable on the market). That's because, to simplify a bit, the new formats transmit the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Video Record Drum
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Loading Pin
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Tape Path on a VHS Video Recorder

Figure Two
Tape Path on a VHS Video Recorder

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Steve King,
Commodore Magazine
April 1988

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Oran J. Sands III,
Info Magazine
June 1988

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video signal over two wires, rather than one. More on that later.

All the enhanced systems are downward compatible. For example, S-VHS machines will play and record VHS tapes but a VHS player goes out to lunch if fed tapes recorded in S-VHS. There is also VHS-C which is standard VHS in a smaller package, allowing for miniature camcorders. These tapes will run in a standard player with a special adapter. And then there's S-VHS-C. Confused yet? You can't, however, play tapes recorded in one format in a machine of an entirely different format, Beta in a VHS machine, for example. The cassettes won't even fit.

Video Compatibility

Video systems are actually much more compatible among themselves than are computers. You have to stand on your head to bridge MS-DOS and AmigaDOS, but all American video systems can produce the same composite NTSC signal. (The PAL and Secam standards and their variants, used in other countries, are different but suffer little when converted properly.)

This is why 2 inch professional tape can be copied down to VHS and vice versa. Video processors, Amiga genlocks and frame grabbers will work with the signal put out by any NTSC machine, regardless of format. (The enhanced format machines put out single wire NTSC signals as well as the two wire 'Y connector' signals, so those peripherals will still work, but you loose some of the 'S' advantage). The point is, you can edit a master tape in a Super format or standard Beta or 8mm and, by connecting the machines together, make VHS copies for distribution, for everyone's grandmother to watch.

Revolutionary Developments

On the horizon are a couple of developments that may revolutionize the field. One is pure digital video, in which all the picture values are recorded in binary code, sort of like a super high speed Amiga frame grabber. Aside from incredible quality and the ability to manipulate the picture like an RGB image on your computer screen, digital video will make generation loss extinct as the Studebaker. It is just now becoming available to professionals.

The other development is the recordable compact disk, which could eventually make video tape, (as well as computer hard disks) obsolete. Tandy claims to have one almost ready for the audio and computer markets. A perfect medium for recording analog or digital video, the disk would make any frame instantly accessible, with no tedious tape winding. When? Probably not for years, but who knows? For an amateur, spending big bucks on equipment that may soon be obsolete is always a risk.

How to decide? If you build onto equipment you already own, as I did, the choice of format is moot. If you're starting from scratch, check out the features of the least expensive editing systems in each format before taking the plunge. VHS is my default format and, luckily, there's a great editing system available, as we'll see. Also, it's the people's choice and slightly cheaper.

Editing in Video

Dump the garbage and put the goodies in the right order—that's editing. You can't do good work without it. Video editing is copying the picture and sound from one tape to another, so you need two VCRs: a player and a recorder. The heart of any system is the recording VCR. You may have heard the latest hype about how nice it is to have a flying erase head on your camcorder, but where you really need one is on your editing recorder. Flying erase heads make clean edits a sure thing. To understand why, it's important to know how video is recorded on tape.

Edison discovered a century ago that recording analog sound is easy because the signal is simple enough to transmit along a string stretched between two tin cans. Today, you can record good sound or your Walkman, by slowly dragging magnetic tape past a stationary recording head.

But it's different with the very complex signal required for video. You need super fast tape speeds to record all that information; the earliest video recorders used huge reels for just a few minutes of TV. On modern VCRs it's done by recording a very narrow magnetic track diagonally across a wide tape, rather than lengthwise along a long tape. That's how you pack a huge amount of information at great speed in a very small space.

Look at the numbers: your Walkman audio cassette moves tape past the head at 1 7/8 inches per second and sounds great. In VHS video, the high speed mode (SP) is 1.31 ips, which is slower than an ordinary audio cassette. But the video heads zip past the tape at something like 170 times the linear speed of the tape, over 200 inches per second. That's how the very high video frequencies are packed onto magnetic tape, and on some machines, where the superb Hi-Fi sound comes from. It's done by mounting the video and Hi-Fi audio recording heads on rotating drums.

The Video Signal at Work

Every video signal carries a control signal that your VCR uses to force its head drum to rotate exactly in sync with the picture information. The control signal is recorded along the edge of the tape, so that sync can be reestablished when the tape is played back. The control track also regulates the linear speed of the tape, to allow the heads to lay down evenly spaced diagonal tracks.

Because the tape speed is 'servoed' to the control track, two video machines will run at exactly the same average speed even if not connected to each other. They are far more consistent than even the best non-servoed professional audio tape recorders. (Knowing this, I've learned to use several VCRs in tandem for multitrack audio production in my videos.)

The other edge of the tape carries the linear audio track, recorded the same way as the sound on your Walkman, but at a lower speed. That's right, it means that the video sound won't be as good, unless you have a VCR with Hi-Fi audio, recorded at high speed along with the picture. Certain 8mm machines even record sound digitally. But all VHS and Beta video recorders carry a linear sound track in addition to Hi-Fi. Some machines divide this track in two for stereo.

Interlaced Video

A single video picture, or frame, is actually made up of two separate, interlaced images. We know that the Amiga is talented enough to produce an interlaced screen when we need it, which is one of the reasons it is so appropriate for video work. On the computer, an interlaced image seems to flicker because the sharp picture elements on each scan line arrive and depart thirty times every second, which is too slow for eyes to interpret as a steady image.

But interlaced video was created to reduce apparent flicker. The eye blends flashing images into a smooth flow at about forty frames a second. Movies, which are shot at 24 fps, get around this by projecting each individual image two or three times before moving on to the next one. Interlace does its trick by renewing the screen every 1/60 second instead of every 1/30 second.

Actually, only half the screen is being renewed that quickly but it's good enough to convince our eyes. It's not the top or bottom half that's renewed; it's every other scan line. The odd numbered scan lines are painted on the screen first, while the even ones are blank. That's video field A. Then these disappear and field B fills in the spaces, all within 1/30 second.

Unlike computer graphics, video images usually aren't sharp enough for details to be unique to a single scan line and they're usually moving around, so individual elements of the picture don't seem to disappear unnaturally. That's why the interlacing trick works fine for TV even if it is distracting on the computer. Each diagonal track on a tape is the recording of one video field, two tracks to a frame.

Recording Interlaced Video

To record or read these various types of information on the tape, the VCR must have a separate head for each kind of track. Each head can both record and play back. There should be an audio head (with its own private erase head) for sound, a head for control, and a pair of heads on the rotating drum, one for each field. Some machines have additional heads on the drum for Hi-Fi sound and still-field playback. The drum makes one complete rotation for each full frame of video, i.e. 30 turns per second, 900rpm. Most VHS camcorders have four video recording heads on a half size drum that rotates twice as fast. Each head records half a field.

Adding it up

How does this all relate to editing? Edits in film are actual cuts, with the last frame of one scene literally glued to the first frame of the next. Video 'cuts' need to be as accurate and as clean as though they were done on film; a full frame ending and the next one beginning, without garbage on the screen to distract the viewer. The picture mustn't roll, tear, show noise or discoloration. In electronic imagery, this isn't as easy as taking scissors to celluloid.

Before recording a track, you should erase that section of tape to clean up any previously recorded material or noise. Every VCR has a full erase head that wipes off everything across the width of the tape. Because the video tracks are recorded diagonally, this head leaves a series of partially erased diagonal video tracks where it begins to work when you start recording.

The newly erased tape slowly makes its way over to the video record heads, a trip of a couple of inches on a VHS machine. That means the video heads must record over unerased tape for several seconds before reaching even partially erased video tracks and, finally, a fully cleared path. When you record new video over an unerased track, the new recording dominates. Problem is, you get interference from the old

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picture, in the form of shimmering, vertical rainbow stripes that dance across the screen and decrease in height as the old tracks pass by. (photo Shimmering rainbows, orange and blue appear over the woman's left shoulder, a result of recording over unerased video)

Most newer VCRs have features that allow you to start a new recording over an old one, in sync (frame servoed) so the picture doesn't usually break up or roll when you play it back. (See figure Two.) This wonderful electronic jiggery pokery still leaves you with rainbow patterns on the screen where the video tracks overlap, so it doesn't give first class results. But it's not bad.

What happens where you stop the new recording before the end of the old one? You get a lengthy blank space in the control track after the end of the new recording, as well as a section of erased video. (See Figure Three) When you play it back, it looks awful on the screen, as the head drum looks in desparation for a control signal, meanwhile reading garbage from the video portion of the tape.

Some machines get around this by not turning the erase head on at all when you choose 'insert edit' to record over old video. You get rainbows during the whole sequence, but no blank spaces. Then there are VCRs with an 'insert' feature that turns off the erase head a couple of seconds before allowing the tape to stop, so there's no blank video and no blank in the control track. Instead of ugly noise at the end of the insert, you just get rainbows and the picture may roll a bit. This is better, but it's not true insert editing, as we'll see.

Some machines, especially camcorders and portable VCRs, offer a 'back spaced edit' feature which backs the tape to before the end of the last recording, and plays back a section of it, which you then get to see in the electronic viewfinder. The new recording begins just before the end of the old recording. That way the rainbows don't last very long and there's no blank space in the control track.

Near Perfect VCR Editing

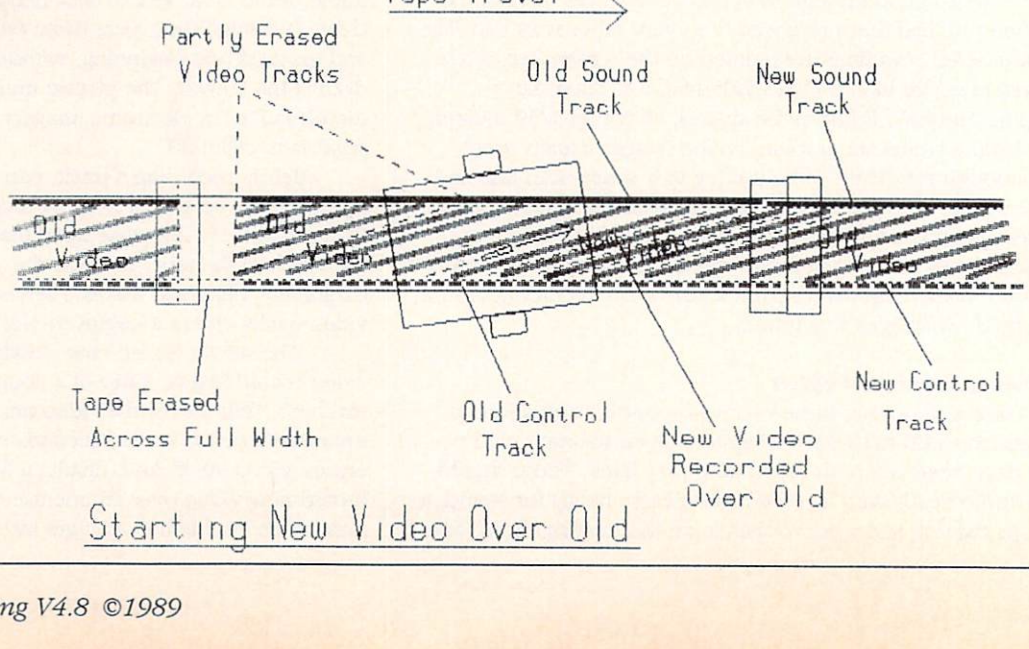
Here's a way you can get almost perfect edits on most consumer VCRs. After copying the first scene to the recorder, you hit the pause button, instead of stop. The machine halts after recording a full frame, and is prepared to start the next full frame on tape it has already erased: no rainbows. You must leave the machine in record/pause while cuing up the beginning of the next scene on the player. Back up the player and run the scene by, releasing pause on the recorder a moment before the new scene begins.

The problem is, you have to work fast or the recorder will turn itself off. That's because when a machine is in pause, the head drum continues to rotate in one place on the tape: to keep from scraping a hole in the tape and avoid excess head wear, most VCRs automatically go from pause to stop after about 5

Figure Two

Starting New Video Over Old

Video Heads begin recording over unerased old video, produces "rainbows" on screen until erased portion of tape reaches video heads



minutes.

If the machine drops out of RECORD even once during your session, your next edit will have a rainbow and may roll a bit. If you want clean work you'll have to start the whole production over again. It's an awkward way to operate, especially for long work, but you can get quality results. At least it can give you a taste of how exciting quality video editing can be. If your video production is generated entirely on the computer, this kind of editing may be all you'll ever really need.

The key to practical editing is a machine with a 'flying erase head'. Mounted right on the rotating drum, it clears a path just ahead of the video recording heads. As a result, diagonal tracks are erased diagonally, frame by frame (two fields at a time). All professional editing equipment is built around this feature. Most 8mm consumer decks have it now, and all S-VHS and ED-Beta equipment are so adorned. The only consumer-priced VHS machine with a flying erase head is the Panasonic AG 1950. I'd guess that most of today's serious desktop video is produced on this machine.

The AG1950 is a fully equiped consumer-type VCR with a tuner, timer, wireless remote control and all usual the bells and whistles, including Hi-Fi sound. It also has most of the features that you would need on a full professional editing VCR. It has a jog and shuttle control that allows you to move the tape frame by frame or in slow or fast motion in either direction, for perfect cuing. Almost as important, it has a dead accurate, real-time counter (Hours-Minutes-Seconds) that works by counting pulses on the tape's control track. Of course, there's the flying erase head and the complex electronics that go with it. In addition, two 1950s can be connected to a dedicated automatic editing controller to give you a competent VHS editing system costing less than $3000.

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Editing Modes

With a flying erase head VCR and a decent playback machine, you can produce glitch-free video. You'd use the method I described above, but you can stop and restart the recording machine at any time without destroying the integrity of the tape. The problem is accurate editing. On an AG 1950, you can choose the exact place in the master where your next scene will begin, but landing the correct frame from the original footage at that point is tough.

Here's why: to record a new scene without any glitches, the recording VCR must synchronize itself perfectly to the control track of the playback machine. This is done by rewinding the player seven or eight seconds, then running the tape forward at normal speed. The recorder, waiting in record/pause (or, in some cases, automatically rewound the same number of frames as the player, then run forward), reads the incoming signal and matches it. When the tape hits the right place, re-

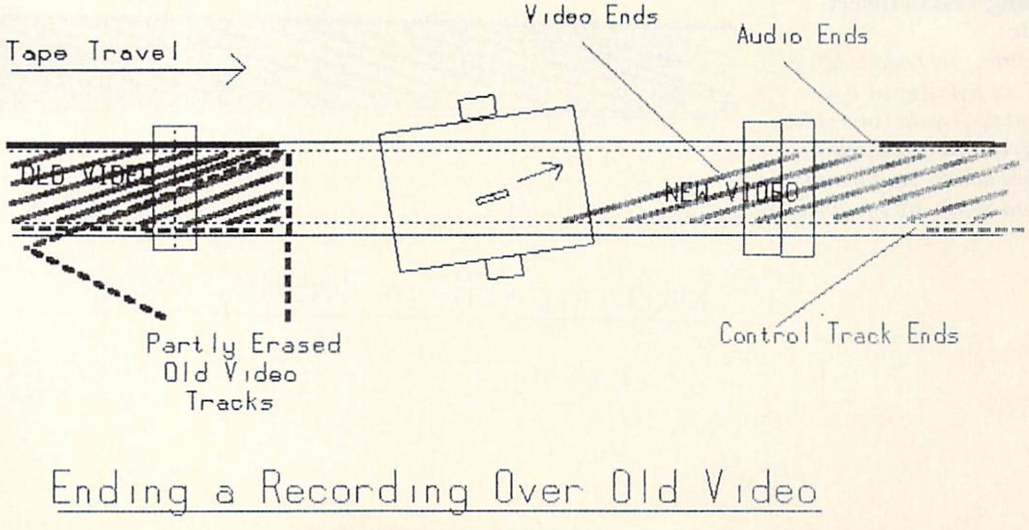


Figure Three
Ending a Recording Over Old Video
Leaves a blank space in the video track as well as the audio and control tracks

cording begins. Editing controllers, like the one available for the 1950, take care of all that for you. Without one, you're on your own.

There are two recording modes in which an editing machine can operate and it is essential to understand the differences between them. In an assemble edit, the recording machine lays down a new control track as it records new video, the same as when you press RECORD. When insert editing, the recorder syncs itself and the incoming video to the control track that already exists on the master tape. Every editing machine, including the AG 1950, can do either kind of edit.

Assemble versus Insert Editing: Assemble edits normally replace the existing linear sound track with a new one. The insert function replaces only the picture. However, it is possible to choose audio dub while insert editing to create a new linear sound track at the same time. There's an audio erase head positioned a fraction of an inch upstream of the linear audio head to allow accurate audio inserts with minimal overlap of old material.

The Hi Fi sound track, if your machine has that feature, is always replaced when you record a new picture, whether in assemble or insert mode. You may choose to turn the volume down to zero so no sound is recorded on that track, but the original Hi Fi track will still be erased. That means you can insert new sound on the Hi Fi tracks without disturbing the existing linear sound, then mix down the two tracks later. For example, you show a sports arena with crowd sounds. Over this you insert Joe Jock talking about the trophy. You can record his voice on the Hi Fi tracks, without interrupting stadium noises (called ambience) on the linear tracks. (note: Hi-Fi sound is multiplexed into the video signal, therefore you must insert new video material when adding Hi-Fi sound.)

How do you use these edit functions? If you are putting together a video on raw tape, you make assemble edits. You would let each scene run at least a few seconds longer than where you plan to end it. That way, the next scene begins on already recorded tape, so the machine can make a clean transition.

If you decide to go back and add a scene over already assembled sections, you'll use the insert mode, since it leaves the existing control track undisturbed and, at its end, neatly reenters the existing scene. Inserting a scene in assemble mode would leave a blank section in the control and video tracks at the end of the scene, reflecting the blank space between the full-tape erase head and the respective recording heads, just as when recording with a regular VCR. When assemble editing, the mess is covered over by recording the next scene.

Most video professionals fear that the patched together control track left by a series of assemble edits may not be perfectly smooth, which risks instable playback. To avoid this, they put a control track on the tape before recording any scenes. This is called editing into the black. It's done by recording a stable, unbroken video signal along as much of the of the tape you intend to use.

You can do this by leaving the lens cap on your camera and recording a tape with no image on it. Your machine must be in RECORD mode (which records video, control and sound, the same way Assemble Edit does) and set to the speed at which you intend to edit (which should always be high speed for best quality). Turn audio volume levels to zero so you don't record room noise from your camera microphone. Instead of black you can lay down color bars or a test pattern produced by your Amiga; any stable video signal will do.

When putting together the video, use only the 'INSERT' mode. If you forget and make even one assemble edit, the control track is broken and you'll have to continue with 'assemble' for the rest of the tape. Or you can lay down another non-stop control track in assemble mode, beginning before the end of the last assemble edit. Once this is done you can resume editing in insert mode.

A fringe benefit of editing into the black is that you can record any section of your sound track before the picture, which is necessary if images on the screen are to match narration or the rhythm of music. You can't dub sound on a section of tape that has no control track. Most machines will just turn themselves off.

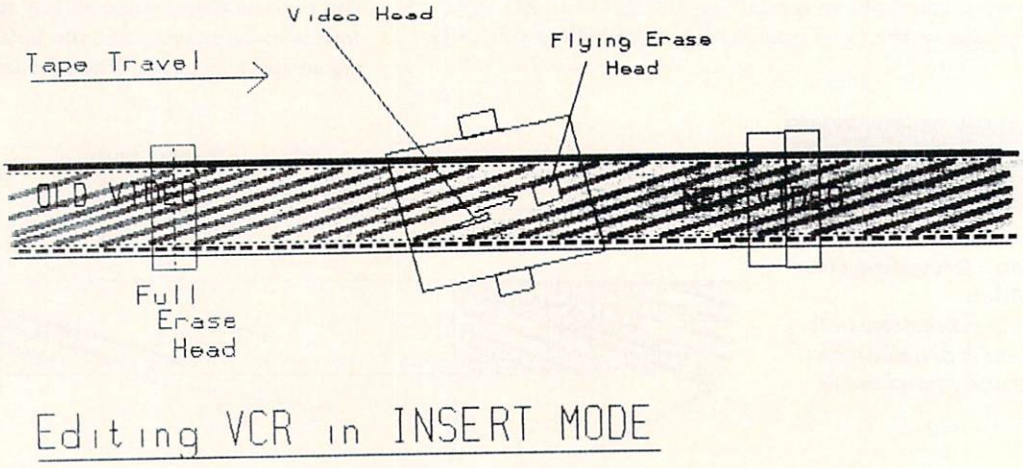


Figure Four
Editing VCR in Insert Mode
The full erase head is off, and the flying erase head erases two tracks (one video field) ahead of the video record heads. Audio and record heads are left alone

OK, so you can conveniently produce clean edited video using a flying erase head editing machine and a standard VCR. Editing accuracy is still a problem. You need to release the recording machine from pause a moment before your playback scene begins because the recorder takes time to start up. On the AG 1950, the delay is more than two seconds.

Here's how I solved the problem. I have a Zenith portable VCR which, to my good fortune, can be set to run backwards at normal speed. By experiment I was able to come up with a stopwatch sequence that gives me reasonably accurate edits. First I cue up the entry frame on the player and leave it in pause. The editing machine is cued to where the scene begins and set to insert/pause or record/pause (for assemble edits). I start the stopwatch and, at the same moment, punch the reverse/play button on the Zenith. When the clock reaches ten seconds, I hit 'forward' on the player, and at 17 seconds release the recorder. I zeroed in at 17 seconds experimentally, by counting the number of frames I overshot or undershot (30 frames per second) and making corrections.

To determine editing accuracy, define your target as the first frame before an edit on the source tape. If you get only that frame, then the next scene, you're right on. Refine this method by using footage of a dial-type stopwatch. My sequence takes into account all the odd things that happen in each operation, like startup delays, the time it takes to reverse the player, and my own ragged reflexes. I watched the fractional seconds on the timepiece and practiced. I could usually land in the original footage within three or four frames of the target. That's about as accurate as the automatic editor I have now. Editing this way is tedious but it gives good results. You might comes up with a similar workaround for your equipment.

The editing controller (AG-A95) made by Panasonic to work with two AG 1950s, does all these kinds of things automatically. It puts most of the controls for both machines conveniently on a single panel. It has a direct access system that will wind the tape to a dialed-in timer setting within about three seconds accuracy, provided the timer was set to zero at the beginning of the tape. If you have put together an accurate log of your shooting footage, scene by scene according to counter location on a tape, this feature can save a huge amount of time. Your Amiga is a big help for logging.

The controller can be set to Assemble, Insert or Audio Dub, and to combine Insert and Audio dub. It will remember the 'edit in' points on source and master tapes and the edit out points on either one. Or you can start an edit and stop it manually when you like. The controller can also memorize and automatically perform a sequence of up to eight edits, but you begin to loose accuracy as the tape is wound back and forth. Quality work requires precision editing, so it's a feature you might not find useful.

The AG 1950 is a wonderful machine, costing less than half as much as next cheapest professional VHS editor. What is it missing? Not much. The biggest problem is lack of frame-accurate editing which is expected of professional machines as a matter of course. The AG-1950 system will come usually within three frames of the target on the source tape and often does better. This is close enough for most work but absolute precision is necessary for some edits.

Since the machine is usually frame-accurate on the edited tape, you can usually try again without rerecording the previous scene. Panasonic technical support said editing is more accurate from good quality master tapes. Video recorded in camcorders are not considered as good as those filmed with a substantial portable VCR. I've had problems with camcorder tapes rolling when edited. A digital stabilizer, made to bust copy-protected tapes, has helped. It might also improve editing accuracy.

My other gripes concern the audio system. The AG 1950 has a terrific Hi-Fi sound system, but only monaural linear sound. Two track linear sound would not only simplify audio post production, it would make a channel available to record a SMPTE time code, or another indexing system that would make locating scenes easier.

Another problem is that the machine doesn't provide separate outputs for linear and Hi-Fi stereo sound. You can choose either, and you can even mix them within the machine, but you can't mix all three channels outboard. That's a real handicap for audio work. I've installed a separate linear output on one of my machines, but it's risky to hack around inside an expensive VCR (buy and study the manual first.) And, sometimes you have to locate frames by audio, rather than visual cues.

That's why I'd dearly like to have a switch to disable the audio mute function, which turns off the sound when the machine is in 'jog and search'. This amateur/professional machine is an elegant and economical compromise. I'm grateful that an affordable system is available. If I wanted everything, I'd have to bite the bullet and spend the big bucks.

Buying my first AG 1950 was a big step. It was a year before I had enough work to justify purchasing a second one. Once I had the editing controller, I felt I had arrived. Then came the Amiga, a genlock, and some sound equipment. George Lucas, look out!

In upcoming articles, we'll look at the video signal, setting up your desktop, signal processing, titling and special effects, editing procedure, audio production,and more. The Amiga is part of it all.

•AC•

Bibliography

Fuller, Kanaba and Kanaba,*Single Camera Video Production.* Prentice Hall, Englewood Cliffs, New Jersey 1982.

While this book is not quite up to date technically, it is an excellent introduction to small scale professional video work; thorough, friendly and readable. It covers a lot of the nitty-gritty things you need to know on topics as diverse as cable connectors, lighting and marketing. I studied it diligently.

Mathias and Richardson. *Electronic Cinematography-Achieving Photographic Control Over the Video Image* . Wadsworth Publishing Company, Belmont, California, 1985.

Film cinematographers are sometimes contemptuous or ignorant of video; often both. Written by a master of film work who is equally comfortable in video, this book marries two rapidly merging fields. It demonstrates how to get aesthetic photographic control over an electronic image in terms anyone versed in photography can understand. Along the way, it is a broad technical introduction to video, deep, but easily accessible. In fact, it's fun to read. This book is a gift to all of us who are seriously interested in video.

Magni 4004 Genlock

review by Oran J. Sands III

I love the feel of a fine tool. Its heft, its balance, all the little things that make clear that this tool is designed for those who will appreciate the little details. Made properly, a good tool makes work a joy. The Magni 4004 is the genlock equivalent of a Snap-On box-end wrench—a pleasure to hold and a privilege to work with.

The Magni 4004 does the usual genlock chores as well as any genlock, and better than most. But once you start using it, you will discover the depth of thought that produced it. The Magni 4004 genlock system simply approaches video from a different angle than most genlock manufacturers do. The people at Magni are video professionals making a professional video device, not computer-types attempting to wrangle video to do their bidding.

The Magni corporation designs and manufactures test and measurement equipment for the television industry, and nearly verey network relies on their expertise . By its very nature, test and measurement equipment must be more capable than the gear it intends to test. Magni is one of the firms that defines the term "broadcast quality" for the rest of us, so it's little wonder that they can design a "broadcast quality" genlock.

For those new to the desktop video scene, a genlock is a device for synchronizing the Amiga's graphics with an external video signal and then allowing the two to be combined. The Magni unit doesn't stop there. It has more than one mode of genlocking, and it provides optional outputs as well. An optional remote control unit is available, as are diagrams allowing you to build your own custom remote control. The unit is controlled by hardware and software, not just hardware. But as any finely crafted tool should, it does its job and does it well.

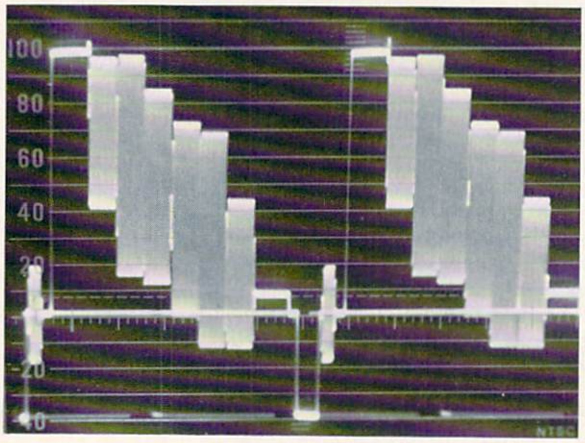
The Magni 4004 genlock system is available for NTSC and PAL video systems. It is designed for use only with the Amiga 2000 computer, because it depends on signals found at the video slot that are not available at the RGB port. This is perhaps the biggest drawback to using the Magni genlock, because many of us started using the Amiga for video back during the A1000 era (and we'll give them up when they pry them from our cold, dead hands). Newer Amiga video professionals however, seem to be snapping up 2000's and 2500's by the carload, so it really doesn't cramp Magni's sales.

If you've heard of the Magni but haven't seen it, that is because Magni has marketed it through its broadcast equipment distributors and publications. Its higher price is considered spare change by the video industry, so sales are brisk in that market. However, many Amiga dealers have begun carrying the Magni due to its reputation and customer demand.

The genlock consists of two printed circuit boards that plug into the video slot and one IBM expansion slot. (The slot is located there to receive power and not data. It won't disturb Bridgeboard operation). These two boards, connected with two ribbon cables, have the remote control and video output connections poking out the rear of the 2000. The video signals are found on the 4 BNC connectors at the end of a "break-out" cable (supplied with the genlock) that attaches via a 9 pin connection. The remote control connects via a DB25 jack.

Installation is quite simple, just follow the manual. But before you plug everything in, READ THE MANUAL!! The Magni has several modes of operation that are preset at the factory. Should you desire to use the genlock differently, you may need to reset these settings, and this could mean unplugging everything. So please, save yourself some trouble and read the manual. You'll have a better understanding about where all the switches and jumpers are located if you can have the boards sitting next to you while you read the manual.

The manual is not the typical manual found with most computer



Full Video Color Bars
Video Input

equipment. That's probably not a bad thing given that most computer manuals are a waste of a tree or two. But the manual does not give you example after example of how and when to use the genlock. It assumes you know why you bought it in the first place. It does, however, give you every little last bit of info about its technical operation and functions. Video professionals will recognize it as a standard video equipment manual, filled with schematic and wiring diagrams, photos and a troubleshooting guide.

Magni is used to getting calls from users about their equipment, but the calls are usually from Chief Engineers of networks and stations. They told me it was a bit of a surprise when they started to field questions from average computer users, whose knowledge of video was limited at best. They have since prepared several publications about different aspects of video that may answer some questions that the manual doesn't.

Many of those questions will be about the different modes of operation for the genlock. There are four methods of genlocking with the Magni and each is concerned with where the output signal gets its sync timing information.

Sync and Burst Lock

This is the most desired mode. The output video sync is referenced to the incoming video (if present). Output signal sync is not necessarily locked to burst (VCR) unless the incoming video is that way (camera signal). The SC/H phase (see sidebar) is the same as the input signal. Therefore, if the incoming signal is not present, the Amiga graphics are synchronized to the internal sync references (in which the sync and subcarrier are locked together). I would expect you to use this mode about 90% of the time.

Burst Lock

In this mode, the subcarrier of the output signal is locked to the input subcarrier, but the sync is regenerated and re-synced to the subcarrier to produce the correct SC/H phase whether the incoming video was correctly phased or not. This mode may be of great significance for users of editing systems that need to maintain correct SC/H phasing.

Sync Lock

This is mainly for use when laying computer graphics over a monochrome signal which has no subcarrier to reference. The output sync is locked to the input signal's sync and the output subcarrier is then produced and referenced from the internal sync generator. The output sync and subcarrier will therefore not be locked together. You probably won't use this option often, but it's nice to know you can mix color and monochrome signals (which can produce a tasty effect).

Internal Reference

The output signal's sync and subcarrier are locked to the internal reference and has the correct SC/H phasing. Since no reference is made to the input video, any attempt to key or fade with that signal will produce great picture disturbance. Since this type of signal can be produced by merely removing the input video when in the first mode, it probably will not be high on your list to use.

Special Effects

The Magni offers several methods of combining and manipulating the Amiga's video and that of your source video. Like other genlocks, the Magni considers all pixels of color 0 (zero) to be transparent, allowing the input video to be seen. The overall effect is that the Amiga graphics appear to be overlaid on the input video picture. The overlay can be faded in and out if desired. It is also possible to dissolve between the input video and the Amiga graphics.

SC/H Phasing

SC/H refers to the phase relationships of the subcarrier signal to the horizontal sync. Although it takes a frame made of two fields to display a complete picture, it takes two sucessive frames to comprise what is known as a color frame. This is because each frame consists of 525 lines of video, an odd number. The subcarrier to horizontal phase changes every other line therefore the phase of line one will be different than the phase of line one of the next frame.

When editing two diferent sources of video together, it is important to not only edit during the vertical interval (between frames), we must also edit between color frames. If the SC/H relationship is off, it will be harder for editing equipment to discern which frame to edit and the result may be a picture disturbance at the edit point.

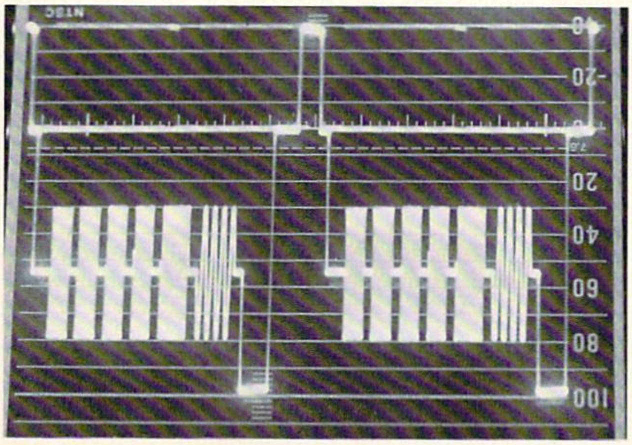
Improper SC/H phasing may occur due to maladjusted equipment, systems delays, mismatched terminations or as the result of a recorder output. Although somewhat esoteric , it has been proven to cause many of the otherwise unexplained editing problems we commonly encounter.

—Oran Sands III

You can also change the overlay (or keying) from using pixels of color 0 to pixels with a certain amount of luminance or brightness. You can also use the INVERT mode and reverse the keying effects, and make opaque areas transparent and vice versa (regardless of type of keying used).

External Key

The external key input is used to determine what picture is shown when. Suppose your external key picture is a white image of a keyhole on a black background as the external key picture.



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Using the ext. key mode, you can combine the Amiga video and the input video, so the output video is the input video where the black exists and the Amiga video where the white keyhole shape was. The external video key source determines the pattern of keying. This is the normal method of keying in a studio setting. If you are in a studio and would prefer to use your own special effects unit to do any keying of graphics then rest easy for the Magni also has a key out signal to use.

Remote Control

Controlling these effects is simple with the optional remote control unit. Connected by cable to the board in the video slot, the remote control gives you access to all the effects. There is a fader for the dissolves and another for the overlay fades. Pushbuttons let you select the type of key function you wish and the effect you need: cut, fade or dissolve. You can set the rate of fade or dissolve with a third potentiometer. Press the correct button and the Magni will perform your selected effect it in the time you specify. The ability to do repeatable automatic effects ensures less human error and speeds up production.

GPI

All effects can be triggered externally by a switch closure. In the video world, this is known as a GPI (generla purpose interface) trigger. Many special effects units and editing systems now interface with GPI capable devices to allow better coordination of special effects during post production.

Software control

You may also control the Magni's effects and modes via software. Shipped with genlock are several disks, a demo by Magni (being redone when I reviewed it), a demo of Sherreff Systems Pro Video Plus (now Gold) and a disk with a program for controlling the genlock. Once started, this program will give you a half-size screen with sliders for setting levels and timing and a menu bar with pull-down menus for selecting modes of operation.

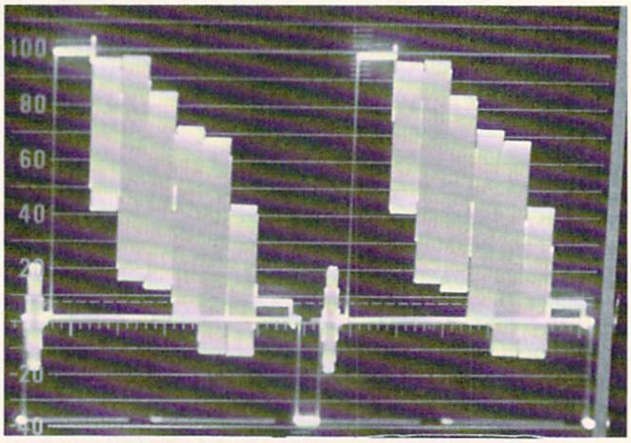
Having your control software covering your picture or animation is not desirable, so there are hot-keys to push the program into the background and to permit operation while it's hidden.

Here is one of the few problems you'll find with the Magni system. The hot keys are all combinations of ALT keys and functions keys, but they are the same function keys used by almost every program in existence, so you will either have the selections available to your graphic program of those of the Magni but not both.

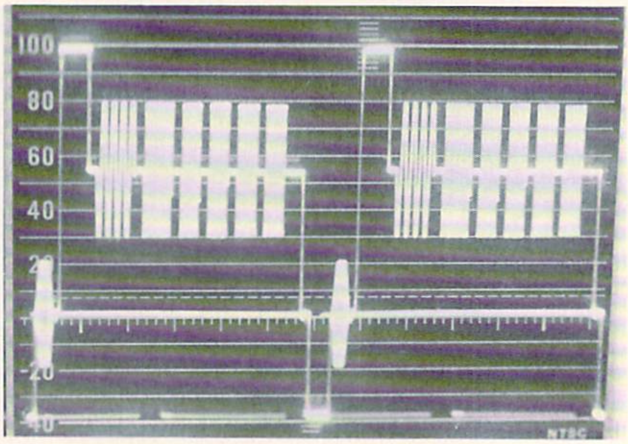
After speaking with Magni about the conflict, I was assured that this was being corrected, since I had the first version of the software. If this is cured then the software will be welcome at my place. The only other problem I experienced with the software was an annoying tendancy to need to give it several keypresses to start a feature. This seems to vary from machine to machine and also depends on the keyboard you have and what programs may also be running concurrently.

Beware!

Another word of warning here. Buried in the manual are the factory settings of all the modes of operation. If



Top: Magni Output
Full Field Color Bars



Bottom: Magni Output
MultiBurst Signal
4.5 MHz

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you install the Magni as shipped and try to run the software, it won't respond. That's because the factory settings enable the remote control unit (DIP switch 6,7,8 Output Mode 0). The manual isn't very clear about this occuring. Selecting Output Mode 1 will allow you to use the software.

At that point, you can use the software to enable the remote control. Most people will probably use the remote control box and not the software. Don't freak out if the software or the remote control box don't work right out of the box. Check the mode setting to see that it's enabled. Again, familiarize yourself with the manual first and save yourself some trouble.

Inputs and outputs

The Magni's inputs and outputs are at the end of a breakout cable that plugs into the board in the IBM slot. Four pigtails ending in female BNC connectors supply the overlayed video out and optional Key Out/ Preview Out/ Black Burst Out signals and the Video input and External Key input. One of the outputs is switchable between supplying a black burst signal (for genlocking other systems to you) or a Key Out signal for using other keying systems or a Preview output which allows you to see your Amiga graphics by themselves even if they are overlaid in the normal video output. These selections are made by moving circuit board jumpers on the IBM board.

S-VHS compatibility

Those who wish to use their Amigas with S-VHS recording systems, rejoice! Magni is now shipping the 4004 system with S-VHS outputs. But note: the S-VHS outputs are of the Amiga graphics only, the combined or overlaid picture is still only a composite video signal. The blackburst/preview and key out signals were replaced to output the S-VHS chroma/luma signals

That wraps up the more obvious information about the Magni 4004 genlock system. Perusing the manual will inform you about the video performance specs which are quite impressive. Worth mentioning are a few of the items that will attest to Magni's pursuit of excellence.

The Magni plugs into the video slot for one reason. Not because it was convenient, but because the slot allows access to the 4 bit digital signals the Amiga normally converts to the RGB analog signals other genlocks use. Magni determined that the Amiga's RGB signals weren't stable enough for them, so they use the orignal 4 bit data and perform their own Digital-to-Analog conversion ensuring more stable color. They then transcode the RGB to Y, R-Y and B-Y signals (an interim step in producing the final composite video signal). At this point they can filter the separate components to reduce the normal NTSC artifacts we would normally see disturbing the picture. Thus, they can ensure not only the best in Amiga video but also meet all braodcast standards.

The Magni 4004 genlock deserves to be considered the genlock of choice for the video professional who demands the best. Amateurs wishing to eventually use their video for more than home movies can't go wrong picking the Magni. The only problems with the Magni are the software driver and the price. Throw away the former and save for the latter. It'll pay for itself soon afterwards. •AC•

Magni Systems, Inc.
9500 SW Gemini Drive
Beaverton, OR 97005
Magni 4004 Genlock, $1695.00
Inquiry #250

Shereff Systems'

Pro Video Gold

by Oran J. Sands III

I'll never forget the day my local Amiga dealer called me and told me in an excited voice that he had a demo of the most wonderful program he'd ever seen. Two hours later, he arrived at my studio and we proceeded to watch the demo of JDK Images's CG1, marveling at graphic and text manipulation the likes of which we'd never imagined. That was 1986 and now 3 years later I'm once again awed by a demo of the same program now upgraded and transformed into Pro Video Gold.

If you never saw CG1 you missed the first character generation emulator program for the Amiga. It allowed you to choose fonts, sizes and colors, and mix them as desired. After you created page after page of such text, CG1 let you change those pages creatively. Pro Video Gold does all that and so much more.

Pro Video Gold (PVG) is the latest in Shereff Systems' line of character generation software designed for the video professional. It offers the features a pro would want: color fonts, graphics, importable backgrounds, and most importantly, anti-aliased fonts.

Anti-Aliasing

Anti-aliasing is the ability to reduce the "stairstepping" of slanted and curving edges of digitally created graphics. (Figure 1 shows the letter A in both aliased and anti-aliased form.) Look from a distance and you'll see that the letter on the right looks smoother than the one on the left. Look even closer and you'll notice that at each "stairstep" there is a pixel of color whose contrast is midway between the letter and the background.

The effect is to fool the eye into "smoothing" the jagged line. The resolution of the two images is the same, but the anti-aliased letter appears to have much higher resolution. So although Pro Video Gold operates in high res, it looks much better. While some programs using anti-aliasing have chosen to confuse everyone with huge claims of mega-resolution, PVG advertises only its 720 x 480 Amiga resolution, but that doesnt mean it doesn't look as good as the others.

PVG now operates in overscan hi-res and accepts standard 16 color (or fewer) hi-res IFF pics as background graphics. However, those graphics need not be overscan size. Horizontal measurements may be 720, 704, 672 on down to 600 and the vertical specs may be 480 thru 400. Any pictures smaller than 720 x 480 will be centered within the display area.

> Anti-aliasing is the ability to reduce the "stairstepping" of slanted and curving edges of digitally created graphics.

Text Generation

The most important features of a character generation program are its fonts. They must be very clean, nicely designed and optimized for the resolution used. Since few clean hi-res fonts have been designed over the years, Shereff Systems made their own and have rightly earned high praise for them. PVG has four typestyles, each in four sizes, including graphics characters and often used symbols.

Typestyles: The number of typestyles used in television titling is small. These usually include something resembling Helvetica and Times. PVG has its own versions of these fonts plus two others. There are 8 additional typestyles available at an additional cost. At first glance, some might find this limiting, but let's see what they can do. You can enter on a line any font resident within the program, and use any of the 16 colors of the current pallette (chosen, of course, from the Amiga's 4096). Each letter may be a different color or size as desired. You may also choose the italics option to slant all the letters.

Color Fonts: PVG also offers multi-color fonts, similar to the Color-fonts you've seen. The advantage with PVG's colorfonts is the ability to choose the multi-color option letter by letter for any of the resident fonts. With the multi-color option you have two choices, 2-color fonts or 4-color shaded fonts. The 2-color fonts are patterns such as cane, swirl, wave, metal and cobblestone. Select both of the two colors from the current pallette. The 4-color option gives you letters that appear to be 3-D shaded or reflected surfaces. Choose these colors from the current pallette.

Anti-aliasing: The best font option is the anti-aliasing. You may turn on the anti-aliasing option and choose the color to use for the "mid-way" choice. Instead of doing special calculations to select where to place these pixels, PVG's fonts have this information built-in. Turn on anti-aliasing and they suddenly appear. Because of the nature of the multi-color fonts, aliasing isn't available when in multi-color mode.

You can design each page with any combination of lines. You can select 80, 64, 48 or 32 vertical lines in height for your fonts, as long as the page doesn't exceed 400 lines. You are not limited to using only that size of font however. Options let you place a smaller letter on a larger text line. Letters may be put on the baseline or used as a subscript or superscript to create chemical and mathematical formulas. All text is within

An Amiga Program for Video Professionals

the normal 640 x 400 area which serves as the "safe title" area. Since different televisions overscan at varying rates it is prudent to make sure your text will always be viewable.

Using PVG

The most pleasing feature of this program is its ease of use. A video professional must not only have quality but speed as well. Pro Video Gold uses the same user interface as CG1 but refined and expanded. You access all program functions by selecting a function key (a novel idea, eh?) which will result in a selection box appearing at the bottom of the screen (or at the top if it would obscure the current edited line).

In this box, you make selections using the cursor keys and the plus/minus keys as necessary. Pressing the return key will complete your selections for that line or letter. Pressing the "p" key in most boxes will select those choices for the page, from the down cursor position, for time-saving global changes. If you select the wrong function, pressing the correct function key will immediately take you to that function. There is no need to step backwards through the selection menus to get to another function. The consistent use of these selection boxes and the selection/function keys makes for faster learning and use of the program.

Another time-saver is the ability to copy a page to other pages—selections, text and all. If you are using identical pages where only the text changes, you are miles ahead of the game using the Page Duplicate feature. The Page Clear feature only affects the text from a page, leaving the selected features intact.

Pro Video Gold can create 100 pages of text at a time. Once created, pages may be saved to disk as a Job. Jobs also load in from disk. The file name has no suffix, so it is difficult to distinguish between jobs or other files. I suggest that you tag each file with a job suffix or something similar.

You can't save 100 hi-res pages on a disk or place them in memory simultaneously, so each job is a description of the pages which are then "built" when they're needed. With 8 meg of memory, the program can keep over 2500 pages in memory at one time.

Quick Backgrounds

We've already mentioned using pictures as backgrounds, but they take up memory space. Using the Quick Background feature lets you use a background at no memory expense. The quick background is a "brush" taken from a current line of text or graphics and then "tiled" or "wallpapered" to create the finished background. Place your text over it as desired in the normal manner. This information is also kept when you save a job to disk. The graphics characters are also usable for quick backgrounds.

Figure One:
The Letter "A" in aliased and anti-aliased form

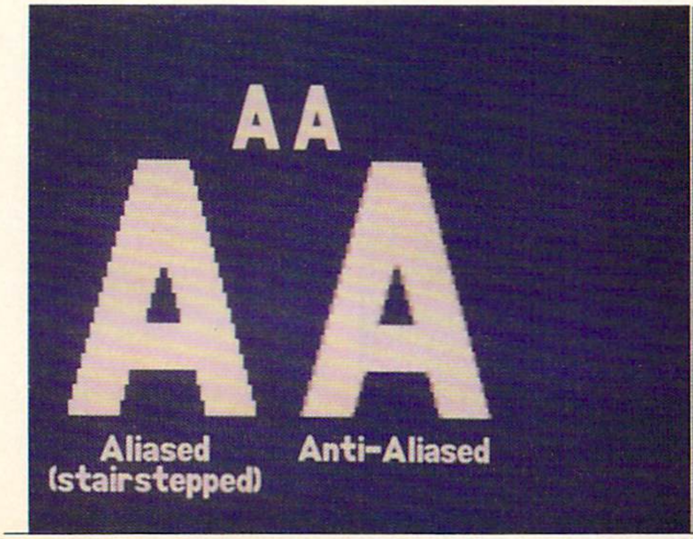
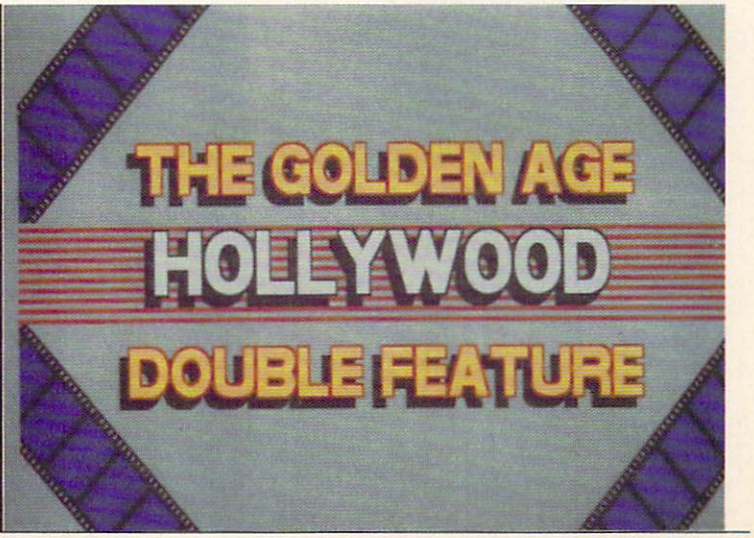


Figure Two:
A title generated in PVG Gold



Options

Most features are selected line by line and may be used in any combination. Features include shadowing, underlining, grids, and color backgrounds. Shadows make the letter appear suspended above the background or extruding (called "fill") from the pallette. Shadows can be any color and any size up to 10 pixels thick. Letters may be edged in any color from the pallete up to 10 pixels thick. Any combination of shadow and edge may be used as long as the final number of pixels doesn't exceed 10.

Underlines or "accent" lines may be added to a line of text or graphics. The line may be any color from the pallete, and it may be under the letter, under but touching, thru the middle, at the top or above the letter as desired. Use the space bar to create lines without text.

Grids are composed of lines—slanted, vertical, horizontal, or crossed—which may vary in color and thickness. If adjacent lines have the same grid, the grids will line up for a continuous look. Grids need not cover the entire screen, but can be small and placed where needed.

Backgrounds are selectable stripes of color that are one half of a line's width. You can color the top half, the bottom half, or both halves. They do not have to be the same color. Like grids, background sizes can vary.

It is not unusual to use all these features together to accomplish the effect you want. As mentioned before, when selecting any of these features, pressing "p" will preselect them for any remaining lines.

Display modes

The difference between a character generation program and a text slide program is that the slide program needs a second program to display the pages of text and change between them. A character generator should be self-contained, allowing immediate use of the created page if necessary. PVG meets this criteria and exceeds it. Not only can you change between the pages, but the variety of transitions at your disposal is truely overwhelming.

Transitions range between simple changes like popping on the new page to digital-style effects like slides and page pulls, but PV Gold doesn't stop there. The digital-style transitions also include page flips and peels. It's quite difficult to describe the effects; they need to be seen to be enjoyed. For that reason, Shereff Systems offers a two-disk demo set.

There are 99 separate transitions. While many of them change or move the entire page at once, many of them will do the transition line-by-line. One transition is customizable; just select the line for transition and the time. A new "window" transition allows a preselected portion of the picture to change.

PVG groups the pages in groups of ten. Pages 00-09 comprise the first group and 90-99 makes up the last. To begin the display press the escape key. This makes the cursor disappear and fully displays any overscanned background. To start a transition merely chose one of the following:

Starting a Transition

1. Press the up/down arrow key for the next/previous page and press the return key at the exact moment you want to change the display.

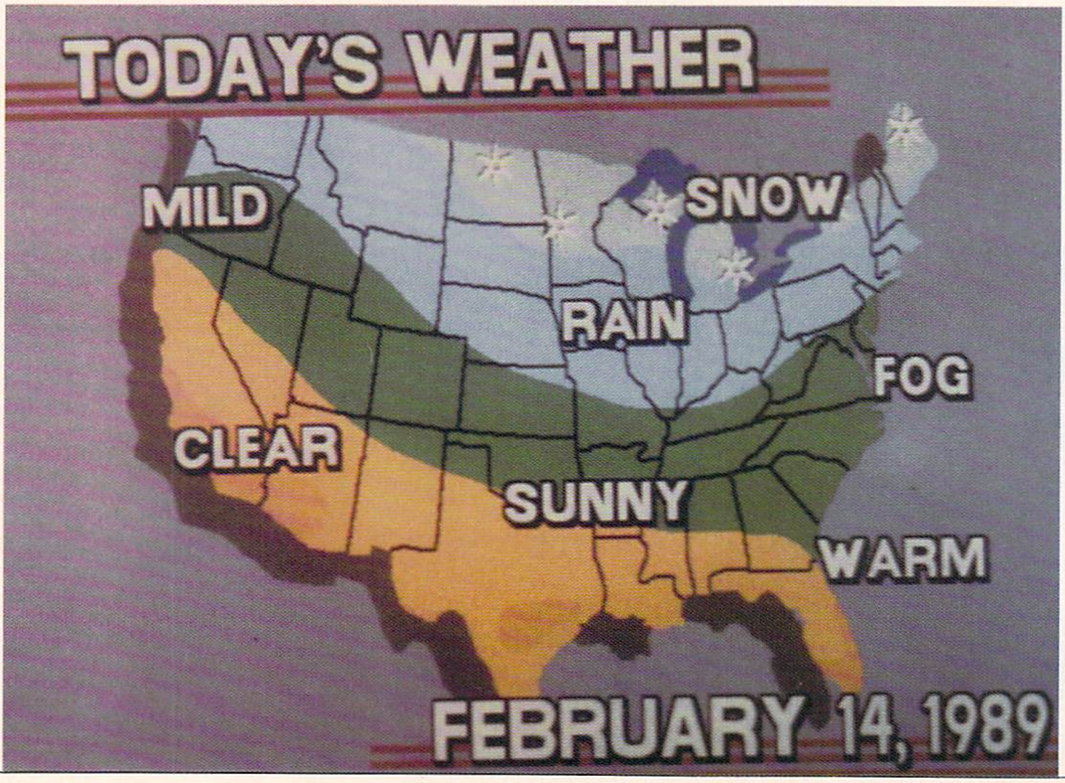
2. Type in the number of the next page to be displayed and press the return key at the exact moment for the change.
3. Press the function key for the group you wish to show. All ten pages of that group will show, for a predetermined time period, in numerical order.

4. Press the shifted function key for the group you wish to show continously.

5. In global show mode, hit the help key for a showing of all the preselected pages of the entire group of 100. This is most commonly used by cable systems using Pro Video Gold to display messages on an unused cable channel.

If you don't wish to include a page in any display group, exclude it by using the PASS transition. All group display modes will then ignore and bypass that page.

While a slow and lingering



Left:
Weather map showing PVG-generated color backgrounds

transition looks pretty, it is little use to the video pro. Today's video requires a fast snappy change to maintain the pace of the production. PVG's transitions are the fastest you'll find. Speeds are variable on all transitions and may vary by page. Dwell times are also selectable.

The package

Pro Video Gold comes packaged with a black, three-ring bound manual and a keyboard overlay for the function key assignments. The manual itself is straightforward and includes a tutorial to help you learn the program. The appendices contain a lot of useful info.

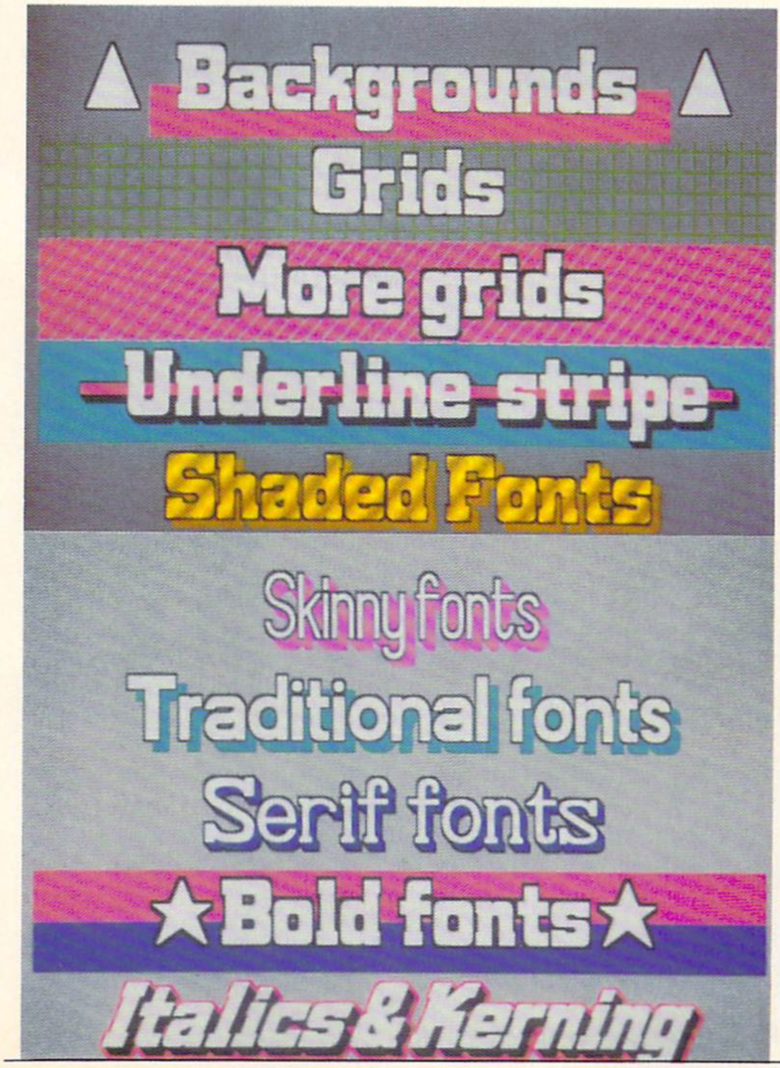
The program itself comes on one non-copy-protected disk. (The program is copy-protected.) To begin, boot the disk and type PVP/PROG (space) and the easy to remember serial number to start the action. The serial number is on the registration card enclosed with the manual.

The manual includes instructions about using PVG from a hard drive. The 2090 hard drive controller problems with overscan programs are now legendary, and to eliminate them PVG bypasses the problem by turning off all video DMA while using disk I/O.

Memory requirements

Pro Video Gold will multitask if the other tasks don't need to write to a screen (i.e., they run in the background). Because of PVG's memory requirements it's unlikely that you'd be able to get it to work. Gold needs a ton of CHIP RAM and plenty of Fast RAM to work. It is possible to operate it in a lesser fashion with less memory. But trust me, get plenty to start with; you'll be glad you did.

Below:
The many text options available in Pro Video Gold



The program requires 445K CHIP RAM and 415K Fast RAM for non-aliased fonts. Aliased fonts require 90K more Fast RAM for a total of 505K. The 4-color shaded fonts need 38K more, bringing the total of Fast Ram to 543K. For full function you'll need 1.5 meg of RAM total. If you wish to use background pics, you'll need even more. On my 2.5M machine I've experienced no problems.

I have not mentioned the mouse because PVG doesn't use it. In fact, it's recommended that you ditch it (for at least the session). Intuition would slow down the program and eat memory.

Conclusions

Pro Video Gold is one of the most professional programs you'll find for the Amiga. It performs flawlessly based on three-year-old, constantly refined code. It's quick, clean and easy to use, with high-quality graphics. No wonder that although Shereff Systems markets almost exclusively to video people, its sales have often surpassed those of other programs whose ads grace every Amiga magazine.

Although written for use as a character generation program, PVC also makes a fine business graphics program. Most business graphics are text-oriented, and with PVG's ability to save any screen as a IFF pic, it's a natural for making text slides. PVG's IFF files are unique as any anti-aliased letters retain their anti-aliasing after saving to disk. This is the key to making high-quality slides.

PVG is one of the first Amiga programs for video professionals. Video hobbyists can use it to good effect titling weddings, home movies, and the odd birthday party or two. There's no reason your tapes shouldn't look like the networks'. Don't forget that PVC works perfectly with any genlock for overlaying those titles. Would I recommend it? You bet! Invest in Pro Video Gold and you'll never forget it.

•AC•

Shereff Systems
15075 SW Koll parkway, Suite G
Beaverton, OR 97006
Pro Video Gold, $299.95
Upgrade from Pro Video Plus- $10.00
Upgrade from CG1- Half price
Demo disks- free
Inquiry #297

MediaPhile MediaProcessor

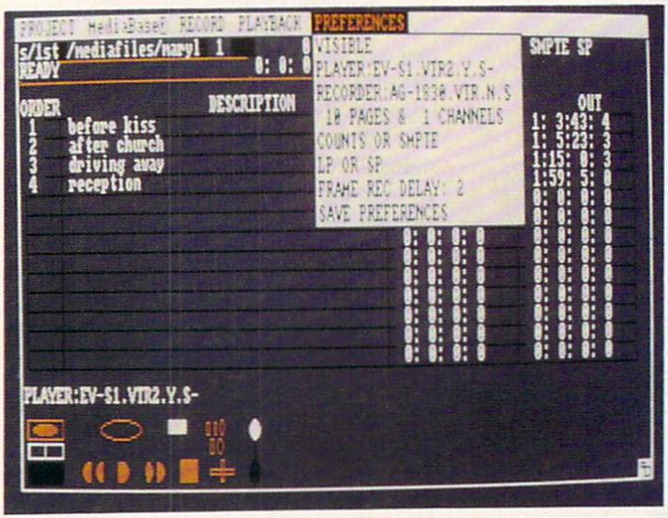
An editing system for the Amiga at an affordable price.

by Larry Krieff

Welcome to another fine Amiga video product. At first glance, MediaPhile doesn't look like much, but it does a lot for the price. The MediaPhile 1.3 infarred contol unit costs $195, MediaPhile 1.3 MA s-port contoller costs $99, and MediaProcessor software is $149. For those who use Superbase, the dongle is included in the hardware.

For this review, I used an Amiga 2000 with a 20MB hard drive and 5MB RAM. (The program needs 1MB of memory to operate.) For video equipment I used a Sony EV-A80 for my source deck and a Panasonic AG-1830 editing deck for recording.

To get started, you must read the manual to install into your source deck a cable called the "sense cable". This cable feeds back information to the computer that gives you the counts or the hours, minutes, seconds, frame numbers so you can edit (or remove) the portions of the tape you don't want to be recorded to your copy. You must make two more connections to the Amiga—one to the second mouse port and the other to the left audio output. I have found only one problem with these connections: if you use your second mouse port for Digi-Droid or Framegrabber, you will have to do some cable swapping.



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s/1st /mediafiles/maryl  1          0 VISIBLE                    SMPTE SP
READY                          0: 0: 0 PLAYER:EV-S1.VTR2.Y.S-
                                       RECORDER:AG-1830.VTR.N.S
ORDER                    DESCRIPTION    10 PAGES &  1 CHANNELS        OUT
  1   before kiss                      COUNTS OR SMPTE           1: 3:43: 4
  2   after church                     LP OR SP                  1: 5:23: 3
  3   driving away                     FRAME REC DELAY: 2        1:15: 0: 3
  4   reception                        SAVE PREFERENCES          1:59: 5: 0
                                                                 0: 0: 0: 0
                                                                 0: 0: 0: 0
                                            0: 0: 0: 0           0: 0: 0: 0
                                            0: 0: 0: 0           0: 0: 0: 0
                                            0: 0: 0: 0           0: 0: 0: 0
                                            0: 0: 0: 0           0: 0: 0: 0
                                            0: 0: 0: 0           0: 0: 0: 0
                                            0: 0: 0: 0           0: 0: 0: 0
                                            0: 0: 0: 0           0: 0: 0: 0
                                            0: 0: 0: 0           0: 0: 0: 0

PLAYER:EV-S1.VTR2.Y.S-
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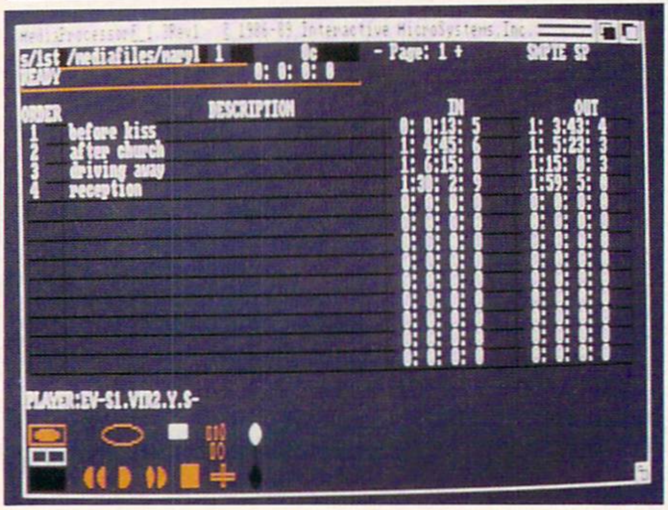
Top
The MediaPhile screen showing the Preferences menu and the current video deck configuration files.



```
MediaProcessorE_1.3Rev1  © 1986-89 Interactive MicroSystems,Inc.
s/1st /mediafiles/maryl  1        0c       - Page: 1 +        SMPTE SP
READY                        0: 0: 0: 0

ORDER                    DESCRIPTION               IN                OUT
  1   before kiss                          0: 0:13: 5        1: 3:43: 4
  2   after church                         1: 4:45: 6        1: 5:23: 3
  3   driving away                         1: 6:15: 0        1:15: 0: 3
  4   reception                            1:30: 2: 9        1:59: 5: 0
                                           0: 0: 0: 0        0: 0: 0: 0
                                           0: 0: 0: 0        0: 0: 0: 0
                                           0: 0: 0: 0        0: 0: 0: 0
                                           0: 0: 0: 0        0: 0: 0: 0
                                           0: 0: 0: 0        0: 0: 0: 0
                                           0: 0: 0: 0        0: 0: 0: 0
                                           0: 0: 0: 0        0: 0: 0: 0
                                           0: 0: 0: 0        0: 0: 0: 0
                                           0: 0: 0: 0        0: 0: 0: 0

PLAYER:EV-S1.VTR2.Y.S-
```

Bottom
The MediaPhile screen showing the start and ending edit points from the source tape.

Installing the program

Installing the software to your hard drive is a snap. Open the program and double-click on the install devs icon and install libs icon and the program does the rest. Once this has finished, double-click on the icon that looks like a TV and the MediaProcessor program is enabled. Inside the media screen you must go to the preference pull-down menu to see the names of the players and recorders you will use.

Now you are ready to learn the icons that determine what you want to do. These icons include power on /off, eject, player/recorder toggle, record, single frame step, slow play, X2 speed, play, rewind, fast forward, stop, and pause. Insert a tape into your player and rewind your tape using the icons described above. From this point on, use the icons on the computer screen to get your VCRs to do what you normally would do if you pushed buttons on the VCRs.

Setting up a Media-Base

The next step is what makes the program unique among editing systems: it allows you to call up a "media base" of information by using "order files" to keep track of the editing starts and stops. Use the order file to give each start and stopping point a name, an order number, and either the counts start and stop or the hours, minutes, seconds, and frame number.

These "order files" can be placed in any numerical order way you choose. For example, say you want something at the beginning of your copy, but it is currently the last thing on tape. Just change the "order number" to 1 and it will now go to that position on the tape first and then go back (or rewind the tape) to the next starting point.

While shooting my own projects, I found that this feature is quite time efficient. On other editing equipment I have tried, you had to manually rewind the source tape, which meant you had to be near the machine at all times. Now I can edit a tape during the day and let the machines record at night. You can do all of the above using one tape as a source. When I needed to use more than one tape as a source, I used the same "media base" name and gave the second and third tapes new "order file names". All of this works easy because of the pop-up menu to select from.

Fast and Accurate

Based on my use of this editing system, I strongly recomend it for anyone who does a lot of dubbing. It is not only fast, but accurate as well. In the time I used the system, I dubbed numerous weddings, and used the seconds on the system to give me play time of exactly 30 second intervals of single pictures. One more helpful feature is being able to preview everthing before the final dub is made.

There are other fine features I did not get time to try on the system, like being able to transfer Sculpt-Animate's animation to video tape and the ability to take IFF pictures and put them to tape via. the program.

The one problem I did encounter was that my Vidtech genlock did not let the program run correctly. I have been in contact with Dr. James Rickman, Jr. the president of Interactive Microsystems, Inc. and he is looking into this. If you encounter any problems while using the system, telephone support is excellent.

•AC•

Interactive Microsystems, Inc.
P.O.Box 1446
Haverhill, MA 01831
USA (508) 372-0400
Inquiry #241

Recording Animations to Tape with MediaRecorder-VS3D

By Michael Morrison

Media Recorder-VS3D (MR) is a software package that works with the MediaPhile MediaProcessor and Aegis' VideoScape 3D (VS3D) to record animations frame by frame. To record frame by frame animations, you will need MR software, the MediaPhile 1.3 Control Unit, and a VCR with flying erase heads.

How It's Done

To begin recording, put your VCR in the record/pause mode then double-click the MediaRecorder icon to get it running. Then start VideoScape 3D. When your animation is ready to be generated, use a menu selection or keystroke to tell VideoScape 3D to start generating your animation. MediaRecorder will do the rest. Once a frame has been generated, VideoScape 3D will wait for a response from MediaRecorder before continuing. MediaRecorder will tell the VCR to record the frame for about 1 second and then return to pause mode. When this happens, the VCR will automatically backspace a few spaces. (The ideal is about 2 frames, but this will vary depending on your VCR.) VS3D is signaled and it moves on to generate the next frame of the animation. This process continues until the entire animation has been generated and recorded.

Drawbacks

The quality of your recordings will depend greatly on your VCR. Your VCR will need flying erase heads, and it will also need to backspace when put into pause/record mode. The number of frames recorded for each frame of animation will again depend on your VCR. This value can be anywhere from 10 frames to about 2 frames. Any animations that you record will be played back at a set rate according to this value. For example: if your record time allows 6 frames to be recorded for every frame of animation, the playback time of your animation on video tape will be 10 frames/second. Your animation will not be able to play back on a VCR any faster .

Plusses

By using MediaRecorder and VideoScape 3D, you can record a long animation that is limited only to the length of your video tape. One of the nice things about this method is that you can record without being there. Just start the VCR, VideoScape 3D, and MediaRecorder; then go to bed, have a snack, or walk the dog while they do their thing. MR allows a clean way to get your animations to tape. You don't have to have VS3D to record your animations to disk (although it is the easiest way). MR allows you to manually record a frame at a time. This means you could display and record each frame of your animation one at a time. Not the most efficient way to do it, but if you had to have it done it will work.

MR also comes with a small version called VS3D_Tiny. This program, run from the CLI, doesn't open any windows and runs in the background. It is functionally the same as the larger version, but you can not interact with the recording of the animation once it starts.

•AC•

Amiga Video Vendors

The following developers have and continue to produce a wealth of software and hardware specifically for the rising interest in Amiga Video, as well as Amiga Graphics and Amiga Animation.

A-Squared Distributions
6114 LaSalle Ave.
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Advanced Computer Design
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Aegis Development, Inc.
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Santa Monica, CA 90405
(213) 392-9972
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Beaumont, TX 77705
(409) 833-2686
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AlohaFonts
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(916) 991-7738
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in NH (603) 643-3882
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AC's GUIDE AMIGA
On sale in September at your local
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Broadcast TITLER

review by R. Shamms Mortier, PhD.

Graphic Designers work with alpha-numerics (letters and numbers) more than anything else. In fact, to be involved in the graphic arts at all, you must have a certain obsession with letters. When presented with a bundle of text, the graphic designer notices the "message" only secondarily. Truly, the medium becomes the message.

The shape, form and color of the text takes on as much value, as much symbolic power, as the verbal content. In our society, this addiction to the visual is geometrically compounded, and reaches for its zenith with the addition of movement (the first evolutionary seduction of the eye) in the videographic arts.

"Pure" graphics are like "pure" science. There is a danger of getting so caught up in the seductive visualization of the world that the implications of the verbal content of the message can be overwhelmed. For proof just look at the graphically alluring posters and leaflets produced by demagogues the world over, and the useless flurry of products in the marketplace—all graphically advertised with remarkable expertise and craftsmanship.

No, the medium is not the only message we are responsible for as graphic and videographic designers. Hopefully, we will be aware and responsible enough not to use the best means for the worst ends.

The medium helps

Be that as it may, it is also a surety that the best intentions and the most necessary message can be wasted and detracted from by less than professional treatment. That is why even the smallest item cries out for the best design. That is why we go into debt to buy laser printers, color scanners, meticulous desktop publishing wares, and state-of-the-art character generators. That is why we lose sleep at the helms of our Amigas, and that is why the technology keeps pushing ahead.

If the wrong people are the only ones able to afford the means with which to shape the knowledge of the future into suitable form (which, in our era, means video-graphic form) then we're all lost.

> *Probably the three items that are most worthy of attention in Broadcast Titler are the number of colors that one screen can have when dumped to video, the effective resolution of the screen, and the importation of all Amiga-compatible fonts.*

This is why the Amiga and other systems like it are so important. They are reasonably priced tools that allow democratic access to the information marketplace, spreading the capability to shape everyone's message into a pleasing visual format. The advent of professional home video may be one of the strongest forces in assuring all of us the exposure to viewpoints and criticisms from the widest possible sources.

Now, to be certain, not every message needs all the glitter and pizzaz that computer graphics are more and more able to invest into it. A good story is a good story, and it can be titled with cardboard cards and crayons. But aside from the level of professionalism demanded by the videographic guilds, audiences on the brink of paying attention to a good story can be made to sit up straight if the form matches the level of design that has become the standard of acceptability. That's just the way it is, period.

The best we can hope for (especially those of us who have unborn stories to tell, and animated dances to share) is that the cost of the best tools will stay within our reach, and be developed and offered to the marketplace by able and caring creative people.

Tools for the task

Enter the folks from InnoVision Technologies. I heard of Broadcast Titler about a year ago during one of my frequent calls to InnoVision, trying to uncover some new information for my columns. I had previously purchased their "Video Effects 3D", and had filled up about forty disks with tumbling, spinning and flying graphics. This program was so well designed and crafted that I wanted to be sure to remain in contact with InnoVision for any future wares they might be dreaming of.

Up until that time, I had never seen this kind of broadcast-quality generation on my Amiga, not even on systems costing several thousand dollars. If you are not familiar with "Video Effects 3D" and think I am just offering unwarranted praise, then check it out at your local dealer. "3D" remains a standard of Amiga software and professional videographics.

So here it is, another InnoVision release. This one will indeed cause you to take leave of your socks. Like Video EFX-3D, Broadcast Titler is accompanied by a big classy binder that holds the manual. The manual is clearly written and amply sprinkled with graphics. It also has a very complete table of contents and a very useful index.

If you cannot understand the manual's terminology or run into Guru City, InnoVision has some of the best phone support in the business. I had one problem (which I'll mention later) and got hold of them on a Saturday! As usual, they were quick to walk me through the possibilities.

The software is copy-protected by the "key disk" method, but the original program is only called up about every eight times you boot the software. Given the climate of ignorant piracy, I am in favor of protection schemes, though "key disk" protection makes me a little nervous. However, this "not-all-the-time" method is better than the constant requirement for the original copy.

Broadcast Titler sees Shereff System's Pro-Video Plus as its nearest competitor, so I have taken pains to compare both of them in an accompanying figure (I own and use both). I see no real competition for either of them, except from each other, although a few other packages offer some similar capabilities (Martin Hash's Animation Titler and Aegis' Titler).

In their league, however, they really do stand alone. They also both operate via the Video Interrupt (the Amiga "Copper" chip), though Broadcast Titler pushes the Amiga's innards to unheard-of resolutions and performances. There seems to be a good-natured casting of the gauntlet in the BT manual, as if daring Pro-Video to take the next upgraded shot. This is great—two super-professional Amiga developers challenging each other for the prize. All Amiga videographic users are sure to win. As you can tell by the chart I have included, InnoVision is the undisputed leader at this juncture.

BT highlights

Probably the three items that are most worthy of attention in Broadcast Titler are the number of colors that one screen can have when dumped to video, the effective resolution of the screen, and the importation of all Amiga-compatible fonts. These are the three areas which Pro-Video will have to pay the most attention to when they burn the midnight oil.

Broadcast Titler can give you 320 Hi-Res colors per page, Virginia! That's right, 320—not the 16 colors that Hi-Res users are accustomed to. It can address 16 colors (a separate Hi-Res palette) per each line of text. There are controls that allow you to set the color ranges of each palette as you create the text. You can also SEE these colors as you go, but if you save the work as an IFF file, you lose the multicolored vision. Better to save your work to video for your portfolio.

I do not pretend to understand the "Super Hi-Res" format the Broadcast Titler uses, except that it requires every bit and every corner of memory in the system. The programming task, as it addresses the hardware at the lowest level, must have been intensive to say the least. The effective resolution of 2160 x 1440 can be alluded to, but it has to be seen to be appreciated. The real-time EFX will be mentioned, but only moving images do justice to their descriptions. I am not kidding when I say you will be astounded (excuse me—I meant Amazed!).

Broadcast Titler can give you 320 Hi-Res colors per page. That's right, 320—not the 16 colors that Hi-Res users are accustomed to. It can address 16 colors (a separate Hi-Res palette) per each line of text.

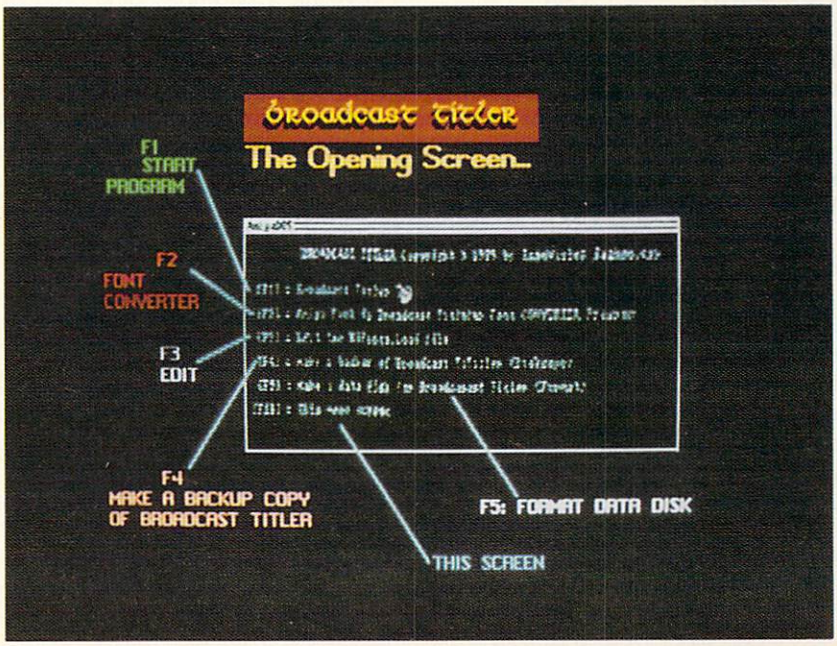
As for the third capacity, isn't this what we wanted all along—the ability to reformat and use standard Amiga fonts? Not that InnoVision will not offer its own fonts as well. It will. These are said to be of such high quality that they will be totally antialiased (meaning no discernible jaggies). They will be constructed in a way that will all but remove the stair-stepping ugliness of rounded and diagonal character attributes, and they will be available soon.

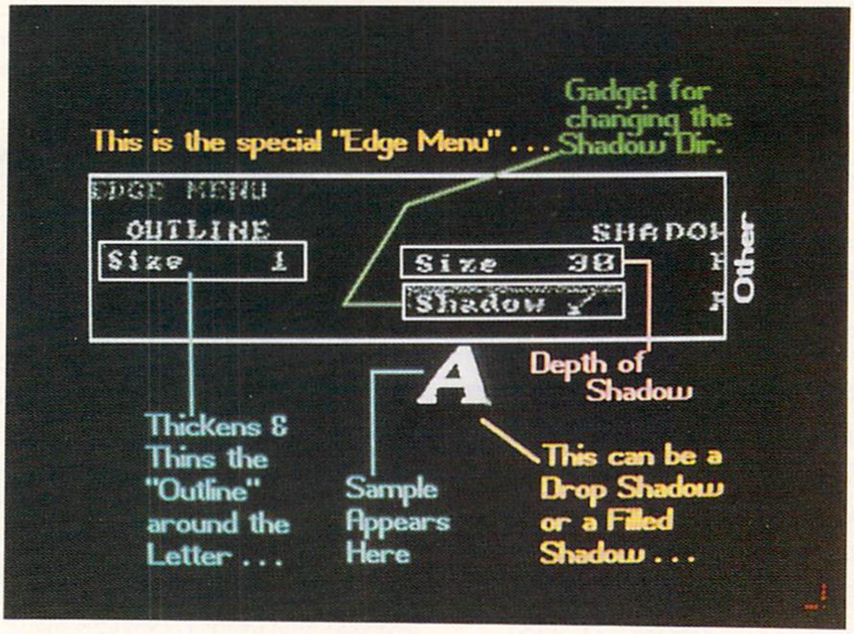
Meanwhile, take a look at all the lovely fonts sleeping in your Amiga libraries, especially the "ColorFonts" that most Amiga visualizers use by the bucket. Of all of these, the KARA fonts stand out as the most exemplary, and they look sharp and shiny in the Broadcast Titler environment.

All Amiga fonts must undergo a translation process to make them compatible with BT, but that's easily accessed from the first opening screen. "ColorFonts" take more than four minutes a piece, but if you create a whole library of these fonts, you will have them forever.

I spent the better part of an afternoon translating about twelve disks of fonts. Most dedicated professional character generators (which cost about three to five times as much as this software) have only a set number of stored fonts. With this software, the Amigan has access to over two hundred

Below
Broadcast Titler's "Opening Screen"




This is the special "Edge Menu" . . .
Gadget for changing the Shadow Dir.
EDGE MENU
OUTLINE
Size 1
SHADOW
Size 38
Shadow
Other
Depth of Shadow
Thickens & Thins the "Outline" around the Letter . . .
Sample Appears Here
This can be a Drop Shadow or a Filled Shadow . . .

The "Edge Menu" for adjusting "character-istics"

alpha-numeric symbols—and there's more coming every day.

Obviously, this program (like most recent offerings at this end of the market) is hungry for RAM. It says it needs at least 1.5 megs, but don't be fooled. I was able to force it to crash after extensive fooling around, and I run 4.5 megs. But believe me, I was able to stretch it way beyond any normal boundaries with my expansion RAM. Hopefully, the price of RAM chips will drop a bit in the near future. That would certainly help to sell more of these packages.

Other features

Character generators are known for making letters and words do all sorts of things in front of your eyes—spins, turns, dribbles and many more choreographed movements. Like Pro-Video Plus, BT allows these movements to be generated by both lines of text on a page and by the whole page itself. BT allows for eight "line" effects, which are ways that lines are invited to enter and leave the page. They include: Cut (sudden appearance), Teletype (typed one letter at a time), Slide (Sideways movement), Ease (acceleration/deceleration), Wipe (screen pattered movement), Random Stripes (horizontal wiping pattern), Stripes (vertical stripes) and Cycle (palette changes for colors 2 thru 7). Effects can be timed as to speed and delay on screen.

The page effects are more numerous (70 full page transitions with 9 speeds each). Both Line and Page effects can be real-time previewed before assignment. It is very easy to set up the transitions, and it's great fun to watch your work move on the screen. It's so much fun that it is easy to get carried away, and make the novice's mistake of doing too much at once. Remember, professional applications seldom require more than two or three different effects in any one sequence.

Both lines and pages can have backgrounds generated behind the text. These backgrounds are as smooth and colorful as silk flags, and come in several choices and a multitude of palettes. You can also import any Hi-Res picture or brush as a background or as a stand-alone screen. Pictures should have the BT screen resolution in mind: 736 x 480. This is the first really "borderless" Amiga screen on a character generator. Your artwork should be designed accordingly.

Now, back to that problem which forced me to call InnoVision. I tried loading some digitized 16-color images, and wound up with a screen full of garbage. I checked with InnoVision, and it seems that BT has a problem with certain formats of digitized imagery. Pro-Video had no problem with these same images. InnoVision said they were aware of the problem and that it would be redressed in a coming upgrade. I successfully loaded some Caligari backgrounds, however, as well as some of the previously saved BT pics.

Since no review is said to be complete without at least two complaints, I have another small gripe. InnoVision should make sure that the "save" requesters list all previously saved material on the disk, so we can remember where we have named and where we are naming. It wouldn't be a bad idea to also have a fill gadget to tell us the storage space remaining on a disk.

Well, that's three ink blots, and even those will not stop me from raving long and loud about this product to everyone interested.

Oh yes, one last tidbit. Years ago, when I was just starting to feel the itch that would later develop into a full Amiga computer-graphics rash, I was mesmerized by another computer—the fabled "Mindset". I did everything I could to attempt a purchase for the University of Vermont, but no go. Only now do I read in the BT manual that Jim Schneider, the head honcho of InnoVision Tech, designed the title and animation packages for the Mindset. What goes around comes around, and at last we're able to do fun business together.

Well I've got to stop writing now, because I'm in the midst of two short deadlined video productions in which Broadcast Titler will play an important part. See you in ROMulan space.

•AC•

InnoVision Technology
PO Box 743
Hayward, CA 94543
(415) 538-8355
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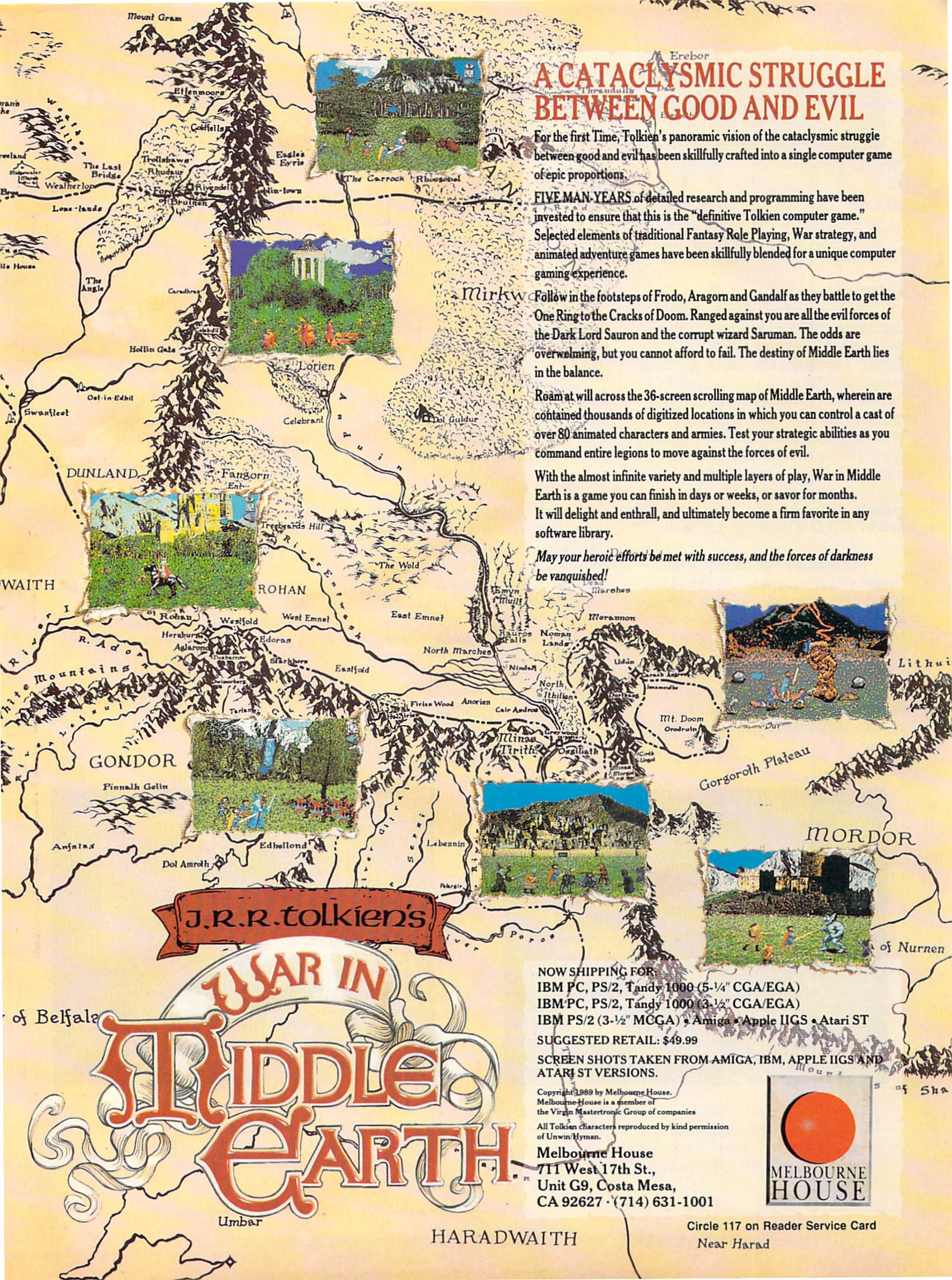
Inquiry # 193



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MELBOURNE HOUSE

Circle 117 on Reader Service Card

V1.4: A Pre-preview

by Mike Morrison

Let me start by stating the following: Commodore is working hard to implement as many of the following features as possible into Amiga operating system 1.4. Some are already done and many are being worked on at this very moment. However, one cannot tell if all of this list will make it into V1.4. as CBM doesn't know what kinds of problems may develop during this OS upgrade. This list is the proposed list of new features; some of these may not make it into V1.4. With all that said, lets move on.

The planned features list for the release v1.4 is substantial! Everyone I talked with at DevCon (See *New Attitude-Devcon SF '89*) seemed very impressed with the plans for V1.4.

Workbench 1.4

Workbench 1.4 underwent a dramatic transformation, not so much visually as functionally. Here is a run down:

Select All—Selects all the icons in the selected window. (Forget about holding down the shift key while clicking with the mouse.)

Drag Select—Hold down the left mouse button and then move it. This forms a highlighted square, like those in a drawing program. When you release the mouse button, every icon that was within the square is highlighted.

Cancel Operation—The right mouse button cancels what the left mouse button is doing. For example, if you are moving a window and still holding down the left mouse button, you can click the right mouse button to cancel the operation and return the window to its original location.

Workbench window—Workbench is now a window. It can be sized, dragged, and layered like all other windows. You can even use the new and improved cleanup (see below) on it.

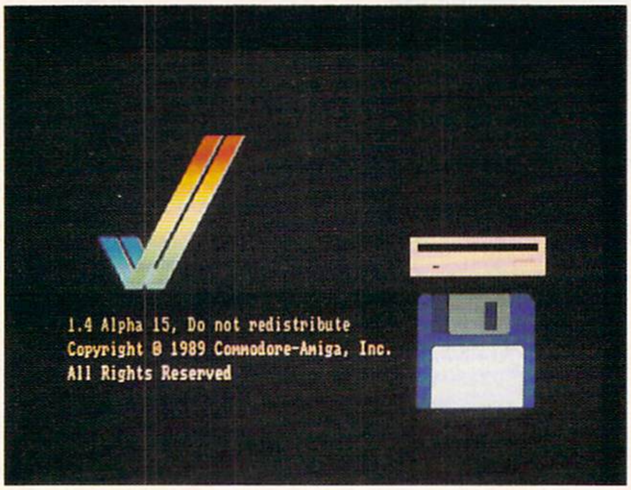
View By—You can now sort files by icon, name, or date. You can still drag them around like icons.

No Icons—This allows you to display all files on a disk that do not have icons with a default icon. That's right! You can now access every file on a disk from Workbench whether it has an icon or not.

Patterns—You can select a different backdrop pattern for both screens and windows. This helps you customize your own WB.

Title Bar—The WB title bar now features a clock and displays of the amount of available CHIP RAM and other RAM.

Out of Gas—The window fuel guage is gone. Each window shows the disk or drawer usage in the title bar. For a disk, the amount of free disk space available in K is shown. No more, "I think it will fit".



1.4 Alpha 15, Do not redistribute
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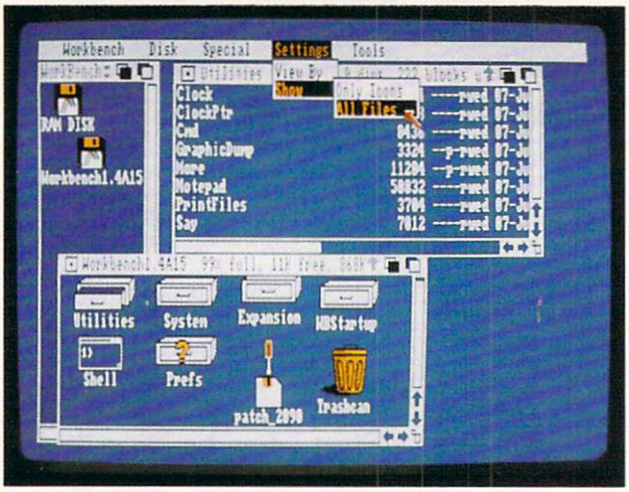
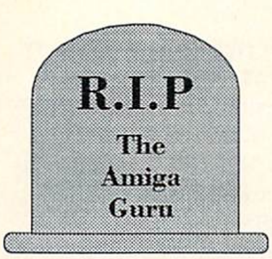
This screen replaces the hand holding the Workbench disk that comes up when you first power up. The disk moves back and forth from where it is shown above into the drive until you put in a disk. The final version will probably change.



```
Clock                 ----rwed 07-Ju
ClockPtr              ----rwed 07-Ju
Cmd              0436 ----rwed 07-Ju
GraphicDump      3324 --p-rwed 07-Ju
More            11204 --p-rwed 07-Ju
Notepad         58832 ----rwed 07-Ju
PrintFiles       3704 ----rwed 07-Ju
Say              7012 ----rwed 07-Ju
```

The preliminary V1.4 Workbench screen. The new option to show files without icons is shown.



The GURU is dead. He died painlessly in the upgrade of the OS to V1.4.

Multi-tasking—You can click on the icon you want while a window is opening instead of waiting for all the icons to come up. Clicking on the close gadget while the icons are coming up and the window will close.

Quit WB—This menu option sends WB away. You can re-run WB from the CLI with the LoadWB command.

Re-format Disk: This is essentially the same as the 'Format QUICK NOICONS' CLI command. It is used to re-format a disk that has already been formatted.

ResetWB—This closes and re-opens WB if possible. When WB re-opens, it uses the current font, font color, and background pattern.

Error Info—The DOS error numbers now have meaningful text strings displayed with them.

Window Arrows—The window arrows have been redrawn and moved to the lower right of the window next to the sizing gadget for convenient.

Icon Text—Icon text and style is selectable from Preferences.

Startup Drawer—Any icon in the startup drawer is executed when WB is loaded. This means if you purchase a program that needs to be run automatically, such as a reminder program, you just drag the startup icon into the startup drawer. Nice!

Asynchronicity—Rename and Info are now asynchronous. Refresh events are also asynchronous. Example: You double click on a disk icon. It first opens the window then adds the icons as it finds them. Before, if you moved or resized the window, some of the icons would disappear until disk access ended, when the icons would be redrawn. Now they are redrawn as needed.

Icon file—The icon file contains the location and imagery of each icon. This means that icons are almost instantly displayed when a drawer is opened.

ARexx

CBM has decided to implement ARexx, the high level macro language, as a standard part of the system software. I was going to try to briefly explain ARexx and then I decided to let Bill Hawes do it, since he implemented ARexx on the Amiga.

"ARexx is a high level language specifically designed for script processing and software integration. It is an implementation of Rexx (a language that enjoys an enthusiastic following in IBM mainframe environments) and thus provides compatibility with an emerging standard in mainframe and PC computing. ARexx provides both a system-wide scripting; language and a standard for communications between software applications, and allows the end user an unprecedented opportunity to extend and customize their software.

Since its introduction on the Amiga in 1987, ARexx has grown in popularity with both end users and software developers. End users enjoy the flexibility of use and the open-ended design of ARexx compatible software, and developers appreciate the extra functionality that ARexx brings to their applications at a minimal extra cost in development time. To date, over two dozen software packages have provided support for ARexx."

It is difficult to grasp the ramifications of having ARexx at the fingertips of both developers and users.

It is difficult to grasp the ramifications of having ARexx at the fingertips of both developers and users. This is another example of the Amiga leading the way. Other home computers don't have anything similar to ARexx, or if they do, it isn't widely used or distributed. Thanks, Bill.

ASL Library

The ASL.library is a collection of commonly used Amiga routines such as requesters, file requesters, sorting, random numbers, and possibly a color palette. This will help different programs look similar so the user gets used to a familiar interface. This will also reduce the overhead of a programmers code.

Most of these routines will seem somewhat familiar to most people. Charlie Heath is working with CBM on these routines. Charlie has worked hard to improve the Amiga. Some of this work has been done free because Charlie wants to bring the power of the Amiga to the users. It's nice to see that all his hard work is starting to pay off.

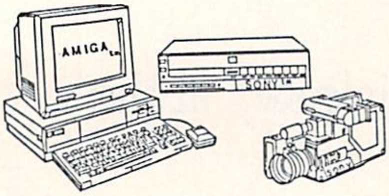
Enhanced Chip Set (ECS)

The ECS consist of the 1 meg Agnus chip (8372-R3) and the new Denise chip (8373-R2a). The chips are plug compatible with all models of the Amiga, except, unfortunately, the A1000.

The new **Agnus** chip supports 1 meg of CHIP RAM, as most everyone knows by now. It also supports rectangular blits up to 32k by 32k! The new Agnus chip is now available at your local Amiga dealer now.

The new **Denise** chip will provide SuperHires mode, Productivity mode, and four Genlock capabilities.

SuperHires mode (35 nanoseconds pixels vs the old pixels at 70 ns) will support up to 1280 horizontal pixels per scanline on a standard NTSC or PAL display. All of the old modes are still supported.



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Productivity mode will allow 640 x 480 non-interlaced screens with up to four colors on a multi-sync monitor. CAD/CAM and desktop publishing are two applications that come to mind as taking advantage of this mode.

Genlock

The new Denise chip allows four genlock modes.

ChromaKey allows any color register to control the video overlay.

BitplaneKey allows any bitplane to enable video overlay.

BorderBlank creates a transparent "frame" surrounding the active area of the screen.

BorderNotTransparent makes an opaque "frame" surrounding the active area of the screen.

The Denise chip will be available with the release of V 1.4, with no date given for either. After speaking with many developers and CBM employees, the general consensus is "possibly before Christmas".

General Improvements

There are many improvements scheduled for V 1.4 that I didn't talk about above, and here they are.

ENV: This device now handles notification. This notifies a program if a file has been accessed (i.e., copied, moved, appended, etc). The new Preferences will use this to know when to update system information after a user modifies it.

File System: Fast file system is now in ROM and supports both the 'old' AmigaDOS files as well as FastFileSystem files. This will allow FF to work with floppies! DOS will support record locking, which is useful for networking (as well as multitasking) enviroments.

Exec: General performance improvements and fine tuning. Exec checks memory and ROM before using it, and checks for a 68030/68882 and enables instruction burst. Preparation for Virtual Memory support in a future version of the OS have been added to Exec. Exec was already pretty stable in V 1.3, and therefore didn't need much work.

Graphics: In addition to the features listed above, there will be support for different resolution monitors as well as different scan rates. The A2024 monitor has built in support. Text speed has been improved and color fonts will be supported. Scalable (outline) fonts will probably come after the release of V1.4.

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Intuition: Screens will support auto scrolling for areas larger than the viewport. There are now custom gadgets and a new string gadget. These gadgets are easy to cusomize, such as custom editing for string gadgets. There is also a new EZRequester which is an enhancement of the AutoRequestor.

Preferences: Preferences will be broken up into smaller modules that will allow greater control over more items. There will also be support for third-party preferences screens. The new Preferences wasn't far enough along to show how versatile it will be.

Trackdisk: The trackdisk device is now slightly faster and has better error handling for marginal diskettes/drives. The trackdisk also offers a no-click option for drives that support this. You can now have a variable number of buffers, and can get this buffer memory back when not in use.

R.I.P: I am sorry to say the GURU is dead. He died painlessly during the upgrade of the OS to V 1.4. He has been replaced by "System Messages". He was such a nice guy.

Wrap up

There is so much information on V 1.4 that it is difficult to cover everything. I am sure I have may have left out something out. Even so, the upgrade to V 1.4 is a substantial one that will help further distance the Amiga from the rest of the pack. I can't wait to get it.

•AC•

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Bug Bytes

The Bugs and Upgrades column

by John Steiner

The one megabyte Fat Agnus is causing a few minor, but annoying, problems for software developers and new users alike. The instructions that arrive with the machines containing the new chip describe a modification to the startup sequence file that must be performed if you attempt to use RAD:, the recoverable RAM disk.

As reported in an earlier Bug Bytes, it seems that RAD: will not survive a reboot with the standard A2000/2500 startup sequence. A simple modification to the SETPATCH command in the startup sequence is required. The newly modified command should read SetPatch >nil: r. The AmigaDOS 1.3 Enhancer manual says the r option is required for use with the Fat Agnus and RAD:.

One thing not specifically mentioned is that the "r" must be in lowercase, as the SetPatch command will not work properly if an upper case "R" is used. In fact, in the previous Bug Bytes, when I documented the requirement of the r option, I used the upper case letter in the sample command line. It is easy to ignore a simple thing like this and then be frustrated while trying to get the command to work. Also, be sure that the version of SetPatch you are using is 1.32 or later.

* * *

According to the notice sent with the new computers, several virus checking programs will respond with an unknown virus alert, when you use the SetPatch r option. This includes the program VirusX, version 3.2, the popular public domain virus checking utility written by SteveTibbet. If the virus report does not point to a floppy drive, and occurs upon startup, you can simply click on ignore, when the virus alert requester appears. Be sure you are booting on a virus free disk, by checking the boot disk on a regular basis.

* * *

You can now order a new Fat Angus chip for your A500 or A2000 from any Commodore Amiga authorized service center. The chip retails for $130.00, and includes instructions for proper installation in both the A500 and A2000. The A1000 does not have the correct socket type to accept the Fat Agnus.

Although you could purchase and install the chip yourself into a 500 or 2000, be aware that you will need access to a special integrated circuit removal tool, and you must cut a circuit trace or two, as well as move an internal circuit board jumper to complete the installation. Labor for installation of the chip seems to run between $30 and $50, according to a random sampling of individuals around the country who have already had the modification done.

Now that the Fat Agnus chip is readily available as an add-on, several software packages have been discovered to work incorrectly with a full megabyte of CHIP RAM. In fairness to the companies said to have problems with the Fat Agnus, new versions of the software and upgrades will be available by the time you read this.

If you are considering purchasing any of these titles, and have the Fat Agnus, ask your local dealer, or call the software manufacturer if you are not sure whether the problem has been repaired or not. Wayne Gretky Hockey has been reported to be non-functional with the Fat Agnus. On a computer that has the new custom graphic chip installed, the program does nothing but spin the drive.

Deluxe Paint III works fine with the full megabyte chip installed, but unless you also have fast RAM in the machine, animation capabilities are reportedly disabled. Pro Video Plus, and its latest version, Pro Video Gold, both have problems with the one megabyte Fat Agnus. A repaired version was expected to be available in July at the latest, and the upgrade will be made available at no charge to those who need it, according to a press release by the program developers.

While on the topic of Pro Video, Sheriff Systems is offering the newly released Pro Video Gold to registered Pro Video Plus owners for a ten dollar upgrade fee. If you have the original Pro Video, you can upgrade to Pro Video Gold directly for a slightly higher upgrade fee. New features include two and four color fonts, anti-aliased fonts, several new transitions and many other features. You will need to provide your Pro Video Plus or Pro Video serial number when making the upgrade. Contact Sheriff Systems for upgrade details.

* * *

Several packages seem to have trouble running in the A2000HD and A2500 with the Fat Agnus and no expansion memory. It seems that the 50 disk buffers allocated to each partition of the 40 MB drive eat so heavily into the available memory being allocated, that some software packages that require one MB to run may think there is not enough RAM in the system.

Packages with this problem will report not enough memory errors. Allocating fewer buffers in the hard disk mount list is a work around that will slow down disk access, but will also allow these programs to run properly.

* * *

According to a letter from Christopher Piper of Washington, DC, Superbase Professional version 3.01 has a problem with the DML command "? Merge Text". Printer codes from text and fields such as bold and underline are not picked up as they are in the "Text Merge" command. According to Christopher, the two commands are supposed to be similar. The problem was duplicated and confirmed by Precision Software, the developers of Superbase. Precision told Mr. Piper that this bug should be fixed in version 3.02.

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Some users have reported problems with formatting hard disks under the FastFileSystem. Apparently, there is a bug in the FastFileSystem. If the boot block of a disk has all 0s written in the block, the DOS generates an error. The bug has been fixed and a bug fix version will be made available shortly.

In the meantime, here is a work around. First, format the partition with the old file system. You will have to make a new mount entry that is the same size, without the GlobVec and FileSystem keywords. Format the device using the new mountlist. Reboot the system, then restore your mountist specifying the GlobVec and FileSystem data, mount your FFS entry, and reformat your drive again.

* * *

I received a letter via People Link Electronic Mail From PDX*BOB, (he didn't leave his name.) He pointed out that he found a couple of bugs in Amazing Computing technical articles. In V4.1, in the article "Industrial Strength Menus", the author states "The Intuition routine ClearMenuStrip does just what it sounds like: It clears the entire MenuStrip from memory in one fell swoop." Actually, this routine does NOT free the memory used by the menus, but simply disconnects the menus from their window by clearing Window.MenuStrip .

In V4.5, "Guru Wisdom" interprets Guru #31038009 as the result of an Execfree twice error. This one is actually generated when Workbench fails to open the icon library. It's formed by the combination of AN_Workbench (31000000),AG_OpenLib (00030000), and AO_IconLib (00008009).

* * *

A representative of ASDG has announced that an upgrade of CygnusEd Professional is nearing completion, and should be ready by the time you read this. All registered owners should have received a postcard announcing the upgrade. The upgrade adds some new features and improves the performance of the professional grade text editor. If you have not yet sent in your registration card, send it in , and notify ASDG directly for upgrade information .

The newly enhanced version of Maxi-PlanPlus, now called Plan/It, and published by B.E.S.T, Inc., has a bug that can cause the computer to lock up. If a fill is performed that causes several consecutive cells to overflow, the computer may lock up, thus requiring a reboot and the consequent loss of the work in progress. It would be prudent to save your spreadsheet to disk before attempting a large area fill that might cause the problem to occur.

* * *

NewTek Inc. has announced an upgrade to Digi-Paint. New features include the ability to work in 1024 x 1024 pixels, a variable dither feature, ARexx support, and several new paint modes. You can get the program, called Digi-Paint 3, available as an upgrade by sending them page 56 of your original Digi-Paint manual and $29.95 plus $6.00 shipping and handling. The upgrade will only be available for a limited time.

NewTek
115 Crane Street
Topeka, KS 66603
(913) 354-1146

That's all for this month. If you have any work arounds or bugs to report, or if you know of any upgrades to commercial software, you may notify me by writing to:

John Steiner c/o Amazing Computing Box 869 Fall River, MA 02722... or leave EMail to Publisher on People Link or 73075,1735 on CompuServe.

•AC•

New Attitude

DevCon San Francisco '89

by Mike Morrison

Commodore held its latest DevCon (Developers Conference) at the Holiday Inn, in the rolling hills of San Francisco. The location was fitting—the rolling San Francisco hills exemplify the up and down attitude of the Amiga community. But if this DevCon is any indication of Commodore's planned direction, maybe next year's conference will be held in Denver, Colorado, The Mile High City.

When I first arrived in San Francisco, people I talked to before DevCon were expectant and eager—but not too eager. Most attendees had been at the last DevCon, and heard a lot of things promised but never delivered, and they weren't going to fall for it again this year.

This attitude faded with each seminar as Commodore showed us what they have done and what they are planning to do. Commodore employees sent the same message in their individual seminars: "We are a team, and we want your input and feedback; we want to make the Amiga great with your help." Most impressively, this didn't seem like a bunch of hot air, as Commodore showed us how they have been doing it, and how they want to increase this 'partnership' further.

Gail Wellington (General Manager, Worldwide Software and Product Support, Commodore International, Limited) began by introducing Dr. Henri Rubin (Chief Operating Officer, Board of Directors, Commodore International, Limited). Dr. Rubin started by saying that Commodore and the Developers are partners, and stressed that this relationship will benefit everyone involved. He told how a recent illness gave him more time to use the Amiga, and he explained how he found things that should have been relatively easy to do, aggravating and frustrating. He said that he has a new respect for developers who have had to work through these frustrations. He suggested that developers use a standard interface in their programs, and said such a concept that will be supported in AmigaDOS 1.4.

> *Commodore employees sent the same message in their individual seminars: "We are a team, and we want your input and feedback; we want to make the Amiga great with your help."*

Dr. Rubin continued stating that this is "the greatest single turning point in the history of the Amiga". Rubin emphasized that "the Amiga multitasks in 170K when other {computers} can't even do it with 4 meg". Rubin believes 1.4 will solve many problems, adding that, "we've got the slickest machine around". He noted that the addition of ARexx, scaleable fonts, and other features in 1.4—along with monetary developer support from Commodore—the Amiga could become the machine that we all know it can be.

Dr. Rubin finished, then introduced the new President of CBM USA, Harold Copperman. Mr. Copperman is a 20-year IBM veteran (he left as National Director of Marketing-Academic Information Systems Business Unit), and for 2 years served as Apple Computer's Vice President of Eastern Operations. Although Mr. Copperman has only been at CBM for about 40 days, he has already put his finger on some of the major problems at CBM. He started by citing marketing as the main problem with US sales. (He almost received a standing ovation.) He then outlined five goals for the next year:

1) Improve CBM's image.

- Institute an umbrella ad campaign with a single message. He also said that Fall and Christmas advertising campaigns are underway, headed by a new ad agency from NY.

- Answer the phone on the first few rings.

- Hire more people.

2) Focus on the Amiga product line.

- Copperman doesn't want to abandon the C-64/128 line, but wants to focus on the Amiga. He feels success is based on the proprietary operating system of the Amiga.

- Plans to develop the 5 or 6 different vertical market niches that the Amiga can become strong in. He also wants to give the dealers training in software and hardware.

3) Improve distribution.

- Clean up dealer base. Get rid of the dealers who aren't properly supporting the Amiga.

- Support dealers with training and ask the dealers to do more.

- Look for broader distribution without going to mass markets like K-mart or Toys-R-Us.

4) Reposition CBM in the market place.

- Increase sales to schools grades K-12. He has already hired an executive whose job is education.

- Get Amigas into higher education with sales to universities.

- Create Government sales.

5) Emphasize customer satisfaction.

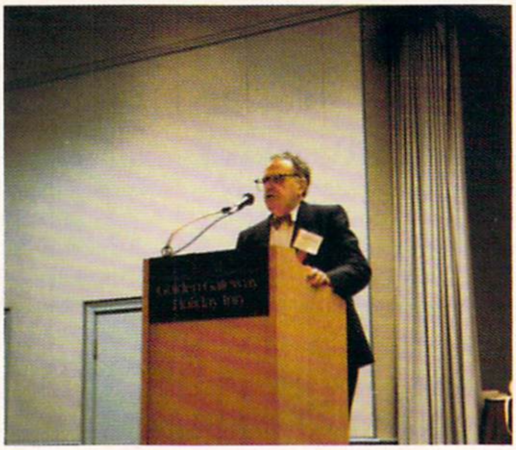
Mr. Copperman said "Happy customers buy, unhappy customers also buy, but from someone else".

- Copperman will hire a VP executive whose only job is customer satisfaction.

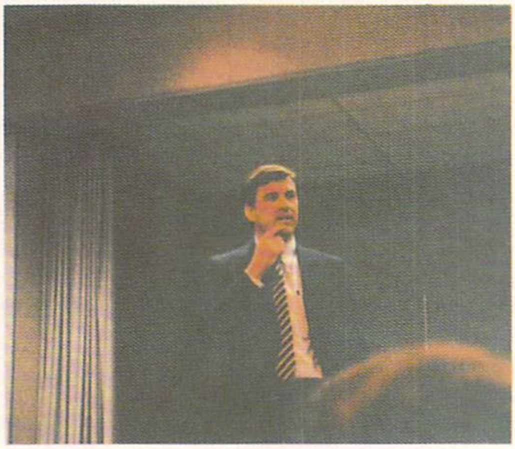
Mr. Copperman finished up by stating that developers should try to increase the image of their products with a professional look, name, and better quality manuals. He suggested that developers incorporate consistant user interfaces, to make users feel comfortable when using different programs. Programmers should write code that takes advantage of the Amiga (no more 'me too' products) and create unique packages that can't be done on other machines.

Having been with CBM for only 40 days, it seems that Copperman has quickly evaluated some of the troubled spots with the Amiga and CBM. His speech was uplifting and had many attendees saying to themselves "maybe this is the right guy".

If Gail Wellington has any say, Mr. Copperman will be around for quite a while. She was quoted as saying "Some people think there is a revolving door on the Presidents office, well, I've got my foot in the door, and Mr. Copperman isn't going anywhere!". Support from people like Gail and her staff will make Mr. Copperman's job much easier.



Right
Dr. Henri Rubin, Chief Operating Officer, Commodore International, Limited, talks to attendees about the Commodore/Developer partnership.



Above right
Harry Copperman, the new Commodore Business Machines, USA President, tells attendees at DevCon SF '89 his Five Goals for his first year at CBM.

Right
Gail Wellington, GM Worldwide Software & Product Support, Commodore International, Limited, and Lauren Brown, Administrative Manager, address DevCon attendees at the pool party sponsored by Commodore the last day of the conference.

Gail Wellington next listed the new products that Commodore has been or will be releasing (see box on page 65). The list is rather impressive, and we can hope that the 'real soon now' really is real soon.

Commodore seemed adamant about not giving release dates for products that are not available now. It seems they have learned from the past. Another missing bit of information was pricing.

Andy Finkel (Manager of Amiga Software, Commodore-Amiga) outlined the changes and new features of 1.4. Please see "V1.4: A Pre-preview".

The rest of DevCon was a series of seminars giving on different aspects of Commodore's products and V1.4 of the operating system. Each seminar was headed by a Commodore employee who is actually working on the topic being covered. This was very nice for developers because it gave them an opportunity to ask questions, give feedback, and make suggestions. Not only did Commodore welcome the feedback, but it wanted the feedback.

The show on a whole seemed to be upbeat and had some atendees walking out at the end of seminars saying things like "They actually implemented such-n-such" and "They're actually listening to us". It certainly seems as though Commodore has taken a step in the right direction, and a big step at that.

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A2360 (This number may change)
- Hi-res card.
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- 256 colors from a palette of 16 million.
- TIGA 34010 chip.
- Requires multisyncXL or equivilant.
- Developed by the University of Lowell.
- Supports two overlay planes.
- Available soon.

ECS (Enhanced Chip Set)
- 1 meg Agnus (available now).
- Super Denise (available with release of 1.4).
- See article "V 1.4 pre-preview".

A3000
- The only official information releasedon the A3000 is that it is a 68030 based machine.

C Notes

from the C Group

Directing programs via the Command Line

by Stephen Kemp

In previous columns, only a few (if any) of the programs presented required any user input during execution. Everything was "hard-coded", which usually makes a program very limited in its usefulness. There are, however, a number of ways to increase a program's usefulness by providing it with external (and variable) information. One way to direct a program is to provide information via the "command line".

The command line refers to anything included after you type the name of the program to be executed, and before pressing enter.

```
1>GENERIC TEST.C TEST.BAK
```

In the above example, the command line contains the characters that occur after the "1>" which represents the DOS prompt. Note two things about the command line. First, it includes the name of the program that is executing (in this case, GENERIC). Second, in C the command line is not provided as a whole, but is divided into multiple elements. (We'll discuss this in detail later.)

Any C program can reference the command line by adding two parameters to the "main" function at the program's beginning. These two arguments are usually named "argc" (argument count) and "argv" (argument variables). As I mentioned, the command line is divided into individual elements. The number of elements is reported in the count variable (usually a short integer). The second parameter is an array of pointers to the individual elements. Thus, the declaration for the main function for a program which intends to read the command line should look like this:

```
main( argc, argv)          /* program start */
short argc;               /* argument counter */
char *argv[];             /* argument pointers */
```

Alternatively, the second parameter can be declared as a pointer to a pointer of characters:

```
char **argv;               /* argument pointers */
```

Deciding which definition to use is a matter of personal preference since they both define essentially the same thing. The advantage of the first method is that the array can be indexed any number of times via subscripts. The second method can avoid subscript overhead but will require "extra" code if the program needs to examine the command arguments more than once. What the program intends to do with the elements usually determines which method will be the best to use.

The names you choose for these two variables is only important if you want other programmers to understand your code. I strongly recommend that you use the normal naming convention of argc and argv. Be sure to check in your C compiler manual whether the argument count is a short or long integer. If the documentation merely states "integer", the count will be the default type used by the compiler.

Standard C provides the "startup" code necessary to divide and count the elements named on the command line. The standard practice is for this startup code to parse the command line into groups of non-spaced characters. This was probably the difficult way of saying that the elements of the command line are space delimited. A null (0) is placed after each group making it a valid string variable. The array of pointers merely contains a pointer to the beginning of each string of characters. This means the number of spaces between the words are not important. The command line displayed earlier could have looked like the following example and accomplished the same thing.

```
1>GENERIC            TEST.C              TEST.BAK
```

You might wonder how you can include a "phrase" or sentence on the command line without it being chopped up. Well, most parsers recognize and require "quoted" strings to be one element. By preceding the first word of the phrase with a quote and trailing the last word with a closing quote, we could include any number of words and spaces as a single element. (Note: You can write programs like ECHO (provided on your DOS disk) which accept a string without quotes, but the original command line must be used before parsing. If you are interested in this approach, read through your C compiler manual to determine whether such a variable is available.)

Remember, the program name is reported as an element from the command line. Therefore, if the argument counter reports only 1 element, then only the program name was entered on the command line. A check for the proper number of arguments should probably be included very early in a program. Why spend time making the user wait for any number of startup events only to discover that the parameters were insufficient?

In my programs, I like to include a short set of instructions that can be printed to the console if too few or an incorrect number of parameters are included on the command line. Usually, this "note" contains the title and version of the program as well as an example of the required command line. This usually saves me from having to answer that "How do I start this thing?" question from everybody that gets the program.

Since we know that the beginning index for arrayed variables is zero, it should be easy to deduce that argv[0] will contain (or rather point) to the name the program was invoked by. At first glance, it may seem odd that the name of the program is included as one of the command line arguments. Actually, there are several reasons why this is supported.

Some operating systems provide ways to give one program multiple names. These synonyms all execute the same program, but the program might perform alternate tasks depending on the name it was called by. Also, by examining the name, the program may determine whether it was executed from a specific drive or directory not included in the search path.

Finally, the first argument may also help to determine whether the program was called from the DOS command line or executed from another program. For our purposes, your programs will not care what name is used, so assume that indexing into the argument variable array begins with one.

Referring back to the command line that I have already used, you should be able to describe what the program will know once it has started:

1. argc will be 3
2. argv[0] is a pointer to the word GENERIC
3. argv[1] is a pointer to the word TEST.C
4. argv[2] is a pointer to the word TEST.BAK

For your perusal I have included the source to a small program demonstrating the use of the command line. This program is named GENERIC because it forms the basis of many programs I hope to describe and include in this column in the future. The arguments on the command line are assumed to be file names or file patterns that might match multiple files. The pattern matching is provided via the library that accompanies the Manx C compiler software.

If you have Lattice C, you may need to replace the function "scdir" with a function of another name, or you may have to write an "scdir" function using several functions provided in the Lattice C library. Be sure to check your reference manual to see what is available. Also, the function named "access" is merely a function to determine if the file exists. If Lattice does not provide a similar function, substitute and open and close function (this is probably what we will eventually do anyway).

Type it in and try the program. Once you are satisfied that it works correctly, set it aside and make a copy of the source to another name. Then use the new copy to do further experiments. You can learn a lot from experimentation.

Listing One
GENERIC.C

```
/* GENERIC.C is a program intended to be used as a starting point*/
/* for a variety of “utility” programs.                           */
/* This version uses the MANX 3.6 standard library.               */
/* The basic start for many utility programs involves reading     */
/* the command line for a list of files or instructions and then */
/* proceeds to search for each prior to processing.               */
/* If insufficient information is determined then the program     */
/* will issue a statement to that effect and further instructions*/
/* for the user to follow.                                        */


#include “stdio.h”
#include “fcntl.h”

extern char   *scdir();                 /* directory function*/
extern short  access();                 /* file accessable function*/

main(argc,argv)                         /* program start */
short argc;                             /* argument counter */
char *argv[];                           /* argument variable pointer(s)*/
{
    char *fptr;                         /* pointer to a filename*/
    short cnt;                          /* counter for files    */
     short ndx;                          /* index for arguments  */

    if (argc <= 0){                     /* if no arguments provided */
         printf(“File (pattern) required\n”);   /* print a message*/
         printf(“   GENERIC [file pattern] ...\n”); /* example */
         exit(0);                       /* exit the program */
    }

    for(ndx = 1; ndx < argc ;ndx++){                  /* examine arguments*/
         for(cnt=0;(fptr=scdir(argv[ndx]));cnt++){/* look for wildcards
*/
              if (access(fptr,0) == 0){              /* if file is found
*/
                   printf(“*** %s ***\n”,fptr);    /* display filename
*/

/*——  Utility program specific code goes here ———   */

              }else{                                   /* if not found */
                   printf(“Cannot find %s\n”,fptr);/* indicate */
              }
         }
         if (cnt == 0)                                 /* no matches */
              printf(“Cannot find %s\n”,argv[ndx]);/* for this argv */
    }
}
```

•AC•

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Version 1.5

To help inform Amiga users of the newer Amiga viruses and provide them with the means to detect and eradicate those pesky little critters!

Files and directories on the inNOCKulation Disk include:

Virus_Texts (dir)
Various text files from various places (Amicus #24, PeopleLink, and elsewhere!) describing the Virus(es) and people's experiences and their recommendations; TVSB "The Virus Strikes Back": satirical text describing future efforts to rid the universe of the dreaded (silicon) viruses! Interview with the alleged SCA virus author!

WB_VirusCheckers (dir)

VirusX3.2
Runs in the background and checks disks for viruses or non-standard boot blocks whenever they are inserted. (Recognizes several viruses and non-standard boot blocks. Removes virus in memory. Has a built-in "view boot blocks" & other features.)

Sentry
Revision of VirusX1.01 in Lattice C.

ViewBoot
Highly active mouse-driven disk and memory virus-checker which allows you to look at the pertinent areas (useful in case you supect a NEW virus!)

VRTest3.2
Watches memory for viruses; will alert the user and allow their removal if found. Can check & INSTALL disks, etc.

CLI_VirusCheckers (dir)

AVirusII
From The Software Brewery (W. German). Disables a virus in memory.

Clk_Doctor3
Corrects problems with the clock (caused by malignant programs, perhaps not really a "virus") (A500 & A2000)

Guardian1.1
Checks for attempts at viral infection at boot! Allows you to continue with a normal boot (if desired). Includes a small utility program to permanently place the program on a copy of your kickstart disk.

KillVirus
Removes (any?) virus from memory.

VirusKiller
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Boot-Block_Stuff

SafeBoot2.2
SafeBoot will allow the user to save custom boot sectors of all your commercial disks and save them for such an emergency. If a virus somehow manages to trash the boot sectors of a commercial disk, just run SafeBoot and it will restore the boot sectors, therefore saving your disk!!

Virus_Alert V2.0.1
Yet another anti-virus program with a twist. Once installed on your boot disk a message is displayed just after a warm or cold boot notifying the the user that the disk and memory are virus-free, and forcing a mouse-button press before continuing.

BootBack1
Saves and restores boot-blocks. Runs from CLI only.

Antivirus *aka AVBB*
Includes SEKA assembler source.

XBoot
Converts a boot-block into an executable file, so you may use your favorite debugger (Wack, Dis, ...) to study it.

The inNOCKulation disk also includes icons and arc files.

To order the inNOCKulation disk, send: *$6.00* *includes postage & handling*

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Roomers

by The Bandito

[The statements and projections presented in "Roomers" are rumors in the purest sense. The bits of information are gathered by a third party source from whispers inside the industry. At press time, they remain uncomfirmed and are printed for entertainment value only. Accordingly, the staff and associates of **Amazing Computing™** ***cannot be held responsible for the reports made in this column.]***

The story of the secret Epyx machine can now be told in full, and it will no doubt become another Silicon Valley legend. As you may know, some of the original Amiga development team (Dave Needle, RJ Mical, and Dave Morse) were hired by Epyx about a year ago to create a super-secret hardware device (code name: Potato). Lips were zipped tight, but everyone agreed that whatever they were working on would be stunning. Well, the Bandito's sources were correct — they were working on a revolutionary hand-held video game computer.

The specs look something like this: a 65C02 running at 4 MHz (four times faster than a C64), 64K of memory, a 3", color LCD screen with a resolution of 160 x 102 pixels, 16 colors out of 4096 color palette. Dave Needle created a nifty sprite engine for the Potato, allowing unlimited sprites that can be flipped, rotated, distorted, etc. in hardware.

Hardware collision detection, double-buffered animation, color cycling are included, as is a serial port that runs at up to 62,500 baud to connect up to 16 units for "network" games. There's a "joy pad" and several buttons available for controls. Game cards (about the size of a credit card) can hold up to 2 megabytes of ROM or battery-backed RAM or a combination of the two. The unit would run about 4 hours on batteries (rechargable with an adapter). Four-channel sound output (mono, not stereo). Target retail price: $149.95.

Of course they used an Amiga-based development system to work on the hardware and software. The screen resolution is almost exactly one-quarter of a low-res screen, and the Amiga's multitasking makes software development much easier. The work progressed, and according to reports they even brought the project in on time and under budget. But all was not well in Epyx land.

Unfortunately, Epyx did not have a good Christmas this year—no hits to speak of. So they began to get nervous about their big expenditures on this unproven hardware project. They were even more nervous at the thought of the money needed for production and especially promotion, and the effort to get people to develop software for the machine.

Then came the news that Nintendo was also developing a handheld video game machine, called Game Boy (quickly dubbed Lame Boy). The Nintendo machine is technically inferior — black and white, no sprites, and so on, but it's priced at $89.95 and has the enormous monetary mass of Nintendo behind it. So between the lousy cash flow and the looming Juggernaut of Nintendo, Epyx decided to sell their technology to a larger company, one that had good distribution, a track record in the field, enough money for good promotion, willing to battle head-to-head with Nintendo, and of course a company headed by people who are genial, friendly, and trustworthy. Epyx sold it to Atari.

You can well imagine the chagrin the loyal Amigans on the project are feeling. (This isn't the first time they have had to sell their technology for another company to market, if you get the drift.) However, it appears that Atari is really going to try hard with this product, if for no other reason than they don't have anything else interesting to sell. The one redeeming point in the whole deal is the fact that the development system is on an Amiga and cannot be ported to an ST for performance reasons. So if Atari wants software developers, they have to sell them an Amiga system. (That distant sound is the silvery tinkle of laughter).

All software development efforts will apparently be coordinated by RJ Michal at Epyx. The target is to have a number of machines and game titles in the stores for this Christmas. The Bandito will be watching to see if it happens. Hmm, wonder if you could hook it to an Amiga to play games against an Amiga opponent?

What else does Atari have going? Well, they have high hopes for their IBM-compatible portable that's about the size of a video cassette. It's called the PC Folio, and it should be out this summer—of course that's only if you believe Atari (the company famous for announcing and never shipping). Supposedly the Epyx machine is a much better bet to ship soon, since the design was completed already by Epyx.

Oh, and according to recently published interviews with the Tramiels, Atari thinks they are going to make a comeback with the ST in the U.S. market, They must be a few bits short of a full byte over there, or maybe they have some RAM errors. Any support for the ST now is too little, too late. There's no more software support from any company big enough to have a payroll, so it's going to take a miracle to revitalize Atari ST sales.

One final piece of Atari news: Atari has lost its lawsuit against the former owners of Federated stores. You remember, they said Federated had overcharged them for the chain of electronics stores, and they wanted a rebate. Well, since Atari cannot get any money from them, Atari is closing the

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stores and looking even harder for a buyer, but nobody's interested.

Nintendo is really making the entertainment software business run scared. Especially since Christmas was rough for many of the big publishers (Mindscape and Epyx in particular had a lot of software returned unsold after Christmas).

Predictably, the publishers tended to blame somebody else (Nintendo) for taking away their software sales. The publishers would love to see Nintendo replaced by something that offered an open system (where anybody could develop software and not have to be licensed by Nintendo). What will replace it? Leading candidates all look like closed systems (Nintendo's 16-bit, NEC's PC engine, Sega's Genesys box) except for Amiga. Will Mr. Copperman decide to take the plunge and make the Amiga-based game machine?

While we're talking Nintendo, they are negotiating a deal with AT&T to provide a Nintendo-based teletext service. All the usual stuff—home shopping, etc. The difference is that there's a huge base of Nintendos out there. What's next? Will they be adding keyboards and disk drives? How will they make the jump to the next generation of hardware? That's where other manufacturers hold out hope. They have basically given up on trying to beat Nintendo with their current hardware, and they are trying to outflank them to win the battle of the 16-bit machines.

What does the new generation of home video game hardware look like? The Bandito digitized some photographs of NEC's PC Engine on a secret test drive in the U.S. and here are the results.

The PC Engine is based on a 7 MHz 6502 with a graphics coprocessor for fast sprite action. It hooks up to a regular TV and offers a 512 color palette, all on screen at once (individual sprites can have up to 16 colors). Lower resolution than Amiga (at about 256 by 160), and the sound is nowhere near as good.

The most interesting part is the CD ROM player option for $500. This player can play CD-ROM's created for the PC Engine or it can play standard CD audio discs. And with an additional interface it's also a CD-ROM player for a PC. Retail price is $200, and it should be introduced this fall. Games can be on CD-ROM or on credit card-like ROM/RAM cartridges with up to 2 megabytes of memory.

The new Sega Genesys unit is even more impressive. It's built around a 68000 with a 256 color palette (out of 262,000), higher resolution than the PC Engine, and a Z80 dedicated for sound output. There is also a modem option to encourage 2-player gameplay over the phone lines. It's due this fall, too. And Nintendo's 16-bit machine is rumored to be even more technically impressive, though it will not arrive until sometime next year.

So it looks like the Amiga is going to have some tough competition in the game machine business. Commodore still has a window of opportunity to make the Amiga 2500 a player in the marketplace, or better still drop the price on the Amiga 500 and push it into the mass markets. But that opportunity will be gone by the end of this year.

In other news, things have been tough for some people in the Amiga magazine business lately. One newcomer has succumbed to the pressures of the marketplace, and another major magazine is undergoing a major editorial shake-up. The magazine business is tougher than it looks, says the Bandito.

Big game makes a killing

Speaking of tough businesses, the 1988 sales reports are in for the big entertainment software companies, and it's very interesting. Electronic Arts is number one with $67 million, Mediagenic is next with $60.6 million, then Broderbund at $46 million, and Epyx at $36 million.

Don't expect these numbers to grow at the heated pace of the last few years; sales will be up, but probably on the order of ten to twenty percent. This year Electronic Arts is expected to go public, and Broderbund may revive their attempt to go public as well.

The European software market is accelerating faster than the U.S.market, and American software companies are scrambling to take advantage of the situation. Electronic Arts has given up on their attempt to establish direct distribution in England. Apparently, the Brits just like to buy things through distributors, rather than direct. Accolade has cancelled their distribution agreement with Electronic Arts in Europe; they're setting up their own office to handle

European sales.

Software Toolworks has become an independent software publisher and will no longer distributed by Electronic Arts. On the other hand, Electronic Arts has picked up New World Computing, formerly distributed by Mediagenic. Dynamix, a software development group known for simulations like *ArcticFox,* has become an Affiliated Label of Mediagenic. And MicroIllusions is no longer distributed by Mediagenic because of poor sales. Round and round they go, where they stop, nobody knows...

Mediagenic announced results for their fourth quarter ending in March, and for the fiscal year. Sales grew 11% over the year-earlier quarter, from $13.1 million to $14.6 million. But income headed in the opposite direction, from $874,000 last year to $25,228 this year. For the year, their sales were $60.6 million, a 34 percent increase over last year's $45.3 million. But their income this year was $1.1 million compared to $3.6 million last year.

According to the Bandito's 7.16 MHz calculations, that's a profit percentage of a measly 1.8%. Grocery stores do better than that. The Bandito thinks the managers at Mediagenic are feeling the pressure, fingering their necks when the Board of Directors walks by. If their profit picture doesn't improve by the fall, watch out for rolling craniums. In a sign of the pressures, their Infocom division moved to Mediagenic's California offices in a cost-cutting consolidation.

All is not rosy at some of the other publishers. According to sources, Mindscape had a rough Christmas and dumped a large number of its employees recently. Epyx also tightened its belt after disappointing year-end results. The big guys are trying to look lean and mean, anticipating a tough battle for market share this year.

Another piece of news that makes it tough for the entertainment software business: Toys "R" Us is no longer carrying MS-DOS software. Does this mean they'll drop Commodore's Colt line? Why did they do this? Well, the stuff just did not sell. It seems that MS-DOS owners buy maybe one game when they get the machine and that's it, unlike C64 or Amiga buyers, who keep on buying games. Toys might be interested in marketing the Amiga if the price point was right. But is Commodore still interested in marketing the Amiga through Toys? We shall see.

Yet another publisher joins the fray: Gold Disk, not content with professional productivity and home creativity, has launched a new game line called HardWired. Their first titles appear to imported stuff from Europe. Jeepers, there must be a whole lot of games being written in Europe that we never see over here. It's probably a good thing, too.

News from Europe

Cinemaware is also expanding its product line by importing products from Europe. They're trying to pick the more technologically advanced games, though they will be in categories unlike their current software. Look for more European imports from many companies, as they use the greater popularity of the Amiga in Europe to meet their software development needs.

Several of the big Amiga developers are already getting more of their sales in Europe than in the U.S., and there's no sign that this will change any time soon. The savvy developers are strengthening their presence in Europe to take advantage of the larger market.

While we're talking about Europe, the Bandito has heard about another disturbing situation.The European market is very different than the U.S.—Europe sees the A500 as a game machine, mostly with one disk drive and 512K of memory, with a TV set as the monitor. The U.S. sales are oriented more toward A500's or A2000's with at least two drives and maybe a hard drive, and almost everybody has a megabyte or more of memory. So the game players are in Europe, and the productivity machines are in the U.S.

Seems like Commodore could make some real bucks by learning how to sell A2000's to European businesses. It shouldn't be hard since they already have a longstanding reputation there as a business computer manufacturer, and their PC clone line has done well. In the U.S., they should position the A500 as the home computer of choice, and sell it through the mass-market channels just as they did with the C64.

So what's the hold up? Why are they waiting to use this rather obvious strategy? The recent management reshuffling must, by necessity, slow down high-level decision making.

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Hopefully, it won't kill decision making entirely. Let's hope we see the Amiga firmly in the mass markets for hearty Christmas sales, with the more profitable A2000 being pushed even more heavily through the established dealer network, along with all the profitable peripherals.

But A2000's already sell quite well in one country—West Germany. Check out these West German street prices: Amiga 500 = 978DM, and the Amiga 2000 = 1698DM. At the current rate of exchange, that's an A500 for under $500, and an A2000 for less than $850. Now, the A500 price isn't much different than the U.S. price, but the price difference for the A2000 from the American street price is amazing. At those prices, the Bandito wouldn't be surprised to see some West German A2000's showing up in the U.S. soon.

Why are A2000's so cheap in West Germany or, as more people put it, why are they so expensive everywhere but West Germany? Inquiring minds want to know. The German price on A2000's is so low that they're heading to the gray market in England, where the price is quite high. So pressure builds on Commodore to drop A2000 prices in U.S. and leave the higher profit margin with A2500 and the coming A3000. No response from them yet.

OK, OK, the Bandito has gotten the word about X-10 control programs. There are at least two out there—one from Complications in Redlands, CA and one from Digital Dynamics in Santa Monica, CA. See? All ya gotta do is ask. So if you want your Amiga to control your home, all you need is one of these programs and the X-10 modules to plug into your coffeemaker, lamps, TV set, and so on.

HAM Paint Wars

Latest salvoes come from NewTek, promoting Digi-Paint 3 by offering owners of PhotonPaint, DeluxePaint II or Deluxe PhotoLab to upgrade to it. Predictably, MicroIllusions and Electronic Arts are not amused. According to spectators, Digi-Paint 3's "Sachsy" interface looks much nicer than the usual two-color job. The Bandito likes the way the interface doesn't scrunch down when you're in interlace mode—more programs should do it that way.

Electronic Arts has done some limited advertising for DeluxePaint III and has continued to sell DeluxePaint II at a reduced price, since DeluxePaint III primarily adds animation features rather than new paint features. Digi-Paint 3 lacks animation but has all the HAM features. Photon Paint has HAM animation, but not with all the tools of DeluxePaint III or the sharp interface of Digi-Paint 3. You're paying; take your pick.

The World of Commodore

The World of Commodore show in Los Angeles was a bust in the opinion of the exhibitors. Commodore pushed developers into displaying there, but attendance was dismal. As an example of the sterling marketing efforts, flyers promoting WOC arrived at people's homes after the show was over.

Many exhibitors swore they would never go to another World of Commodore show, at least not in the U.S. The Toronto version always attracts huge crowds, but for some reason WOC can't get going in America.

Amigas are being used in a new type of arcade game—control pods called BattleTech, shown at CES. These are full-enclosure video games with a couple of monitors and tons of controls. The twist is that these pods are hooked together, and the players are in two teams controlling simulated giant robots in futuristic warfare. It's expensive to play ($6 for 30 minutes). The units are also very expensive to construct (they contain 2 Amigas a piece, but it's the enclosure itself and all the controls that are so expensive). Will there be a home version someday?

The Bandito doesn't keep a vaporware list, but it is worth noting that the long-awaited Music-X has finally shipped. Many cheers from patient fans. After they use the program a while, we'll find out if it was worth the wait.

On the hyperprogram front, look for at least one HyperCard clone on the Amiga that will read and use Macintosh HyperCard stacks. It requires some interesting conversion algorithms, but the potential is huge.

There are many stacks out there, and HyperCard has given the Macintosh a big selling edge in a lot of situations. Now the Amiga can say, "Yeah, but take that HyperCard stack and run it in full color, full overscan, with really fast ray-traced animations and stereo sound." That may take a bite out of the Apple.

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Software Development *with* Lattice 5.0

by Gerald Hull

For the last couple of months I have been working on a program that should be commercially available by the end of the year. I have been using the new 5.0 Amiga 68000-68020-68881 "Lattice C Development System" for this project. What follows is an account of some of the benefits and some of the problems I have encountered.

Lattice 5.0 is a wonderful, synergistic, and sometimes state-of-the-art collection of tools for software development. It really is, as the PR says, "a complete programming environment for the Amiga." The package includes compiler companion tools, code profiler, traceback utility, source-level debugger, integrated screen editor, assembler, and optimizing compiler.

The documentation is spotty despite two full 3-ring binders. And after two revisions (5.01 and 5.02), some parts of the package (especially the compiler) remain buggy. Nothing is free in this world. On the one hand, you get considerable power and control over software design and development. On the other, you face a stiff learning curve, and may spend time tracking down Lattice's bugs in addition to your own. But I would rather have 5.0 with some problems than not have 5.0 at all.

Compiler Companion Plus

Lattice 5.0 includes the Compiler Companion collection of utilities (BUILD, EXTRACT, CXREF, DIFF, FILES, GREP, LMK, SPLAT, TOUCH, and WC), which were previously released as a separate package. Although recompiled, these programs appear otherwise unchanged, and the documentation has not been updated. The FILES program remains brain-damaged: it cannot handle trailing wild-cards.

Since I recently reviewed the Compiler Companion in AC V.4.1, there is no need to go over these programs again. It's a pretty useful collection, especially LMK, the compilation management program, and GREP, the regular expression parser. Those who bought them separately are probably kicking themselves for not waiting to get them "free" with 5.0.

These tools are joined by others just as useful. They include LPROF, LSTAT, TB (traceback), and OMD. (The first three are new with 5.0.) LPROF and LSTAT generate an execution profile of your software. To take advantage of their analysis, you must first compile your program using the appropriate debugger mode of the LC compiler.

Since other Lattice utilities use these debugger modes, I will jump ahead a bit to describe them. By compiling with options -d0 to -d5, you can control the amount of additional line number, symbol table, and data structure information included with your object files. The penalty you pay is increased compile time and enlarged program size, the latter affecting speed of execution.

However, the BLINK linker has a switch, NODEBUG, that will remove all the excess from the final executable image. It is generally a good policy to compile with the appropriate debug option, and then link under different names both with and without NODEBUG. This way you will have one ponderous version for the utilities that need that extra information, and one "clean" version. By running

```
lprof yourprog
```

your program will execute normally (though more slowly) and you can take it through its paces. While it is running, LPROF takes a peek thirty times a second to see which line of C code is executing. When you quit your program, LPROF will dump its results in a file called

```
PROF.OUT.
```

Now you can run

```
lstat yourprog
```

and get a routine by routine—even line by line—breakdown of where your program is spending its time.

LPROF and LSTAT represent just part of a swarm of capabilities Lattice 5.0 provides for optimizing code, a theme we shall come back to. If you are interested in making your code as fast as possible (and every programmer is), you can determine from LSTAT's profile statistics which routines should be redesigned or downcoded into assembler.

Lattice's old and familiar OMD (object module disassembler) utility becomes extremely useful in conjunction with LPROF and LSTAT. If you have compiled your program with debug option -d1 or greater, then

```
omd >yourprog.omd yourprog.o yourprog.c
```

will generate a listing showing the line-by-line breakdown of your source into assembler and machine code. If you do intend to downcode, the OMD listing will show you exactly what your interface must look like.

However, when you interpret the results of LSTAT in light of an OMD listing, you must take into account that LSTAT correlates each line of C source with the machine code preceding it, instead of following it. In my program, this resulted in the most frequently executed line being a blank.

You implement the new TB (traceback) utility by linking your program with CATCH.O instead of the more conventional startup routine, C.O. Then if your program abnormally terminates, it will automatically construct a file SNAPSHOT.TB containing crucial information in IFF format concerning where and why the problem occurred, including the contents of all the registers and the entire stack. By running TB with various options, you can generate different readouts of that material.

The amount of information

available also depends upon the debugging mode. With option -d2 or greater, you can find out which line from which routine at point led to catastrophe. However, whether traceback works depends on the severity of the error. If it's the kind that usually results in a "Software error — Finish ALL disk activity" requester, you will likely catch it with TB. Unfortunately, if it's the kind that crashes straight to a GURU, you may be out of luck.

Symbolic debugging

One of the more important additions to the Lattice C package is the CodeProbe symbolic debugger, ingeniously nicknamed CPR. Until now, my debugger at the C level has been "printf." I output to the screen the values of critical variables at critical junctures, then try to figure out from there what's happening.

CPR is a much more powerful and useful way to debug C code. Here again you need to prepare by compiling with -d2 or greater, and linking with the ADDSYM switch. This will swell the size of the executable image by as much as a factor of 12.

In one reported instance, a program of 100,000 bytes ballooned to 850,000. This seems excessive, even given the amount of information required by CPR, and we can hope it will be reduced in future versions. Meanwhile, you will need a lot of memory to take full advantage of the debugger.

Assuming that's not a problem, you will find CPR a delight to work with. It's a real-time version of OMD that you can interrogate at the symbolic level. The program puts up a Source window showing the code you are stepping through, either C, assembler or both (my usual choice). The line you have stopped at (in C and/or assembler) is highlighted. Breakpoints show up in yet a fourth color.

There is also a Dialog window providing a command-line debugger, a full-featured descendent of the original Motorola MACSBUG. To step through code you just keep hitting return; command line history is available through the up and down arrows.

Above both windows are a set of function key options attached to the screen and always available. They are often very useful, showing that attention has been given to interface "friendliness". You can call up a Register window, or a Watch window that maintains the current value of user-selected symbolic variables. You can Zoom into a window—make it fullsize and bring it to front—and back out, Swap back and forth between debug screen and application screen, and so forth.

The screen's menus provide a useful subselection of command line (Dialog window) options including setting and clearing breakpoints, watching addresses or symbolic variables, proceeding to a location. Many of these commands are also available through keypad equivalents.

To go through all the capabilities of CPR would require another article. In brief, it is an excellent way to step through your program to a problematic area and probe for the causes of trouble. It is a full-featured symbolic debugger that is as useful at "C level" as Metadigm's METASCOPE is at the assembly language level.

Of course, there are things you can do with METASCOPE that you cannot with CPR. For example, with the former you can position as many windows as you want over sections of memory, and watch them change in real time. You can also call up a listing of the svmbol table and go straight to the routine you want to debug.

However, with CPR you can set "watch break" points, which trigger a halt whenever specified variables change value. (This slows down execution speed tremendously, so it should be used with caution). Also, CPR allows you to snoop around in other, independent tasks, and in principle you can even switch debug control over to them.

The ideal would be a symbolic debugger with the power of CPR and the intuitiveness and facility of METASCOPE. Until that comes along, CPR will do nicely. The 140 pages of documentation for CodeProbe are generally clear and well written.

LSE and ASM

Two final important members of the Lattice 5.0 supporting cast are the integrated editor LSE, and the ASM assembler. The Lattice Screen Editor is a full-screen editor integrated with the compiler: it will step you through each line that registers a warning or error. It also has on-line help information, but in my environment LSE had difficulty finding its help file.

It is user-configurable via a companion program called LSEINST, so that to a certain degree you can emulate your favorite editor. However, there are limits to this reconfigurability. For example, you cannot use the same command for more than one function, and you are not allowed escape combinations.

Once you become comfortable with LSE, you should find it a convenient way to code and debug new routines. I do not use the editor that much, however, I already use three different editors with entirely different command sets, and that seems to be about my limit. Since my program consists of a large number of different modules, I customarily compile and link with LMK instead.

ASM is Lattice's 68000, 68020, and 68881 macro assembler. It is a fully capable assembler, but requires a syntax that differs from the Amiga Macro Assembler (MetaComco) default standard. This means you will need to make some changes if you want to use it on code written in the standard dialect .

You will have to replace SECTIONS with CSECTS, get rid of EQUR and REG, and local labels. The word "MACRO" has to appear on a line of its own, unlike conventional 68000 usage. It would be helpful if Lattice provided a list of these and other differences. Unfortunately, their assembler documentation remains sparse and error-prone. For example, despite page G68, the LIST, NOLIST, and SECTION directives are not recognized.

Largely for these reasons, I never use ASM. Instead, I stay with assemblers that conform more closely to the default standard syntax, such as Metacomco, CAPE, and DevPac Amiga. However, if you are willing to work within those limitations, Lattice's ASM provides a perfectly satisfactory assembler.

Precompiled headers

Of course the star of the Lattice 5.0 release is the LC compiler. There are actually two versions of the first phase of the compiler, LC1 and LC1B ("B" for big). If you use LC, LC1B is automatically invoked whenever needed to generate listings, prototypes, and so forth.

Here we find some of the most ambitious new improvements, but not without drawbacks. Lattice has gone all out to both speed up the compilation process, and help you produce tight, fast code. However, the changes have left a few bugs in their wake, and you cannot always find clear instructions on how to

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However, optimizing is a bit of an art, and what works best in one situation may not be appropriate in another. According to a BIX notice by John Toebes, Manager of Motorola C Compilers for SAS Institute, the owners of Lattice, the compiler works best for subroutines of forty lines or less. You should work toward that target if you want to take best advantage of this capability.

Multitudinous insects

The major drawback of Lattice's new compiler is a disproportionate number of bugs. Everyone recalls the Orson Welles wine commercial in which Welles solemnly intoned, "We will sell no wine before its time." Lattice is no Orson Welles. After two revisions and closing in on a third, they have already corrected well over a hundred different bugs.

Now this is just too much! They are making their established base of users debug their software, and they are making the users pay for the privilege to boot. Of course the good news is that you need not worry about all those bugs if you get the latest release.

The bad news is that the compiler is still not bug-free after all this. I have come across three bugs in the compiler so far that are not included in those already fixed. I have mentioned two; the third is the tendency of LC1B to crash when you ask for a cross-reference symbol table (-gx). Since I have made no special effort to ferret out bugs, unless I am cursed, other Lattice 5.0 users should expect to run into similar difficulties.

To some extent the problems with bugs and documentation are countered by Lattice's excellent software support. They maintain their own BBS and have a technical support hotline, in addition to their conference on BIX. They are also on other networks. For example, you can find JTOEBES and CARLATTICE (Carlotta Deconcilis) on PeopleLink.

You can learn a great deal from these sources. In particular, I have gained a lot by monitoring the conference on BIX. However, you can work up a pretty healthy phone bill in the process. Also, you may not always get the response or the information you are looking for. So far, only one of my bugs has been "officially" recognized; there has been no reaction to the other two. Under the circumstances, one would think that Lattice would be extremely interested in confirming or denying new bug reports.

Conclusion

I do not regret having chosen the Lattice C 5.0 Development System for my commercial efforts. As I said at the start, I'd rather have 5.0 with problems than not at all. I suspect many programmers would agree with me. It provides a powerful range of development and

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AmigaBASIC Programming

Executing Batch Files in AmigaBASIC

by Mark Aydellotte

Many times I have wished that I could copy files with an AmigaBASIC program, format and copy a disk, or perform some other AmigaDOS trick. Unfortunately, most AmigaBASIC programmers are led to believe these sort of complex operations are better left to other languages. They are told that BASIC lacks the proper commands, or simply is not capable of such intelligent tasks.

Fortunately, these pessimistic accusations can be laid to rest. Indeed, AmigaBASIC is capable of executing AmigaDOS commands from within a program. It can even execute a batch file chock-full of AmigaDOS commands. Furthermore, it can pass parameters or variable values to these batch files, allowing the user to customize disk operations.

How can this be accomplished? Well, it's a long story, so let me start from the beginning to make comprehension as painless as possible.

AmigaDOS batch files

An AmigaDOS batch file is simply an ASCII file containing a list of AmigaDOS command strings. A batch file is executed using the AmigaDOS EXECUTE command. Executing a batch file is equivalent to typing each command in that file, into the CLI, one at a time. It's obvious that a frequently-performed and time-consuming task, such as creating a new Workbench disk, could easily be reduced to a single-command operation:

```
EXECUTE MakeWbDisk
```

The batch file MakeWbDisk may contain the necessary AmigaDOS commands to initialize a disk, create several directories, copy vital Workbench files and install the disk.

However, what if you want the file to custom-name the disk? You could change the file with a text editor each time you want to make a new disk, but that would negate the convenience of using a batch file. Thankfully, there is an easier way. The .KEY statement lets you define variables to be used in a batch file. This statement should appear as the first line of a batch file so that no attempt may be made to access variables which have not yet been defined.

There seems to be no limit on the length of variables, nor on the number of variables that can be declared. However, all variable declarations MUST appear on the same line as the .KEY statement. There also MUST be only ONE .KEY statement. After you declare a variable with the .KEY statement, simply surround the variable name in herringbones when referring to it throughout the file. A few lines of a sample batch file may look something like this:

```
.KEY DiskName
FORMAT DRIVE DF0: NAME <DiskName> NOICONS
```

A batch file containing these two statements would format a floppy disk in DF0:, without creating a Trashcan directory, and label it using the name specified in the execution statement.

At this point, you're probably wondering, "How do I execute a batch file containing variables?" Well, this is the really easy part. Just type:

```
EXECUTE SampleFile NewWB
```

This statement could execute a batch file named SampleFile, consisting of the previous two statements. The word NewWB would be passed to the variable DiskName. Therefore, a disk in DF0: would be formatted with no icons and given the name NewWB.

But, what if you wanted the option of specifying the disk drive where the disk will be formatted? To declare more than one variable, just separate the variables in the .KEY statement with a comma. The new statements would look like this:

```
.KEY DiskName,DeviceName
FORMAT DRIVE <DeviceName> NAME <DiskName> NOICONS
```

To execute this batch file, type

```
EXECUTE SampleFile NewWB DF0:
```

Notice that the parameters to be passed to the batch file are separated by spaces. This means that if a parameter contains a space (e.g. NewWB), it must be enclosed in quotes. This makes the execution statement look like this

```
EXECUTE SampleFile "New WB" DF0:
```

As you can see, passing parameters to batch files is ultimately more practical than changing the file itself for each new operation. Now, you are probably asking one of two questions: 1) What does all this have to do with AmigaBASIC?; or, 2) I wonder what's on TV? Well, regardless of how interesting this article has been so far, I will proceed to answer the first question.

This has important applications in AmigaBASIC. If you have several Workbench disks (as I do) and each one uses a different ram device (i.e. VD0:, RAD:, and RAM:), a basic program could benefit from using batch files. Particularly, if that program chains to many independent subprograms, it can load those subprograms into the appropriate RAM device to speed execution. By prompting the user to choose the destination path to which the files may be copied, it would not be necessary to reboot with the "correct" Workbench disk just because a basic program insists on using a ram device that is not mounted.

AmigaBASIC library commands

Fortunately for the AmigaBASIC programmer, this version of Microsoft BASIC allows a fairly simple way of accessing AmigaDOS libraries which contain machine language routines. However, before BASIC can use one of these system libraries, it must have a list of all the routines in the library and a description of each routine's parameters. \This information is supplied in the FD (Function Description) files, found in a special drawer on the Amiga Extras disk bearing the file extension _lib.fd. This drawer is called FD1.2 (on the 1.2 Extras disk), or FD1.3 (on the 1.3 Extras disk). The program that converts these FD files to a format readily understood by BASIC (called the .bmap) is named, appropriately, ConvertFd. It can be found in the BasicDemos drawer on the Amiga Extras disk. There is a major difference between the 1.2 version of ConvertFd and the 1.3 version— but this will be discussed a little later.

Once a .bmap has been created (such as dos.bmap from dos.library), AmigaBASIC may access the corresponding system library with the LIBRARY command. LIBRARY is an AmigaBASIC command that opens a library of machine language routines and adds them to BASIC, thus making them a part of the AmigaBASIC "reserved word" list. For instance,

```
LIBRARY "dos.library"
```

would open the dos library. Notice that the library is not referred to as dos.bmap, but as dos.library. This is because the dos.library is the library to be opened—BASIC will automatically search for the corresponding .bmap file, either in the LIBS: directory or the current directory. Since dos.library is a filename, not unlike a filename in an OPEN statement, it must be enclosed in quotes. The AmigaBASIC programmer uses the LIBRARY statement to tell BASIC the name of the system library that needs to be opened.

When all work with libraries has been completed, the LIBRARY CLOSE statement can be used to close all libraries which were opened with the LIBRARY statement.

Now that you have an abundance of new commands at your disposal, how do you use them? Well, after opening a system library, you must decide which machine language routines are to be used. Next, you must discern which routines are subprograms and which are functions. This information, as well as detailed descriptions of all the routines in each library (up to, but not including, new AmigaDOS 1.3 libraries), can be found in the Amiga ROM Kernal Manual. Discussions on the use of the library functions used in this article may also be found in The AmigaDOS Manual within the AmigaDOS Developer's Manual section under Chapter 2, "Calling AmigaDOS."

Most library routines are functions, but a few are subprograms. A subprogram may be called simply by typing its name and supplying the appropriate parameters. A function, on the other hand, is a little more involved. Library functions, like all user-defined functions in AmigaBASIC, must be declared before they may be used. The statement that declares functions is (believe it or not) the DECLARE FUNCTION statement.

An important function pertaining to this article that can be found in the dos library is the Execute function. This function is used to execute AmigaDOS commands from AmigaBASIC. To declare this function, you would type:

```
DECLARE FUNCTION Execute& LIBRARY
```

The Execute function could now be used in a program, provided that the DOS library has been opened.

There are a few subtle, yet crucial, items to note about this declaration. It should be observed that, although AmigaBASIC does not give a flying flip whether something is written in upper or lower case, AmigaDOS gets offended by improper case usage. Therefore, the first letter of the Execute function is capitalized—because that is the way Execute is spelled in the DOS library. Also, it is vital to know that all library functions accept and return only long integer values. Thus, Execute must be followed by &, which denotes a long integer in AmigaBASIC.

Since functions return values, they cannot be used by themselves. They must be used in an expression. The syntax for using the Execute function in AmigaBASIC is:

```
x = Execute& ( commandstring, input, output)
```

The value returned by the Execute command is a boolean (i.e. true or false) value that is stored in the variable x. There's no need to worry over what is stored in x, because there is no reason to use it. It simply satisfies the condition that a function must be called within an expression. The commandstring is actually the beginning memory address of a string, or a combination of concatenated strings, terminated by the null character CHR$(0). Input and output are long integer values that specify the input and output paths for the Execute command. For now, these will just be set to 0. Executing an actual AmigaDOS command from AmigaBASIC would look something like this:

```
x = Execute& ( SADD( "info >ram:temp"+CHR$(0) ), 0, 0 )
```

Notice that the command string is in quotes and is followed by a null character. SADD is an AmigaBASIC function that returns the memory location of the first character in a string. Hence, the Execute function will start reading string information at the memory location specified by SADD, and will stop when it reaches the null character. Executing the above command in AmigaBASIC would be identical to entering the CLI and typing:

```
1> info >ram:temp
```

The result of either method would be a file named temp in volume ram: containing information on currently mounted devices.

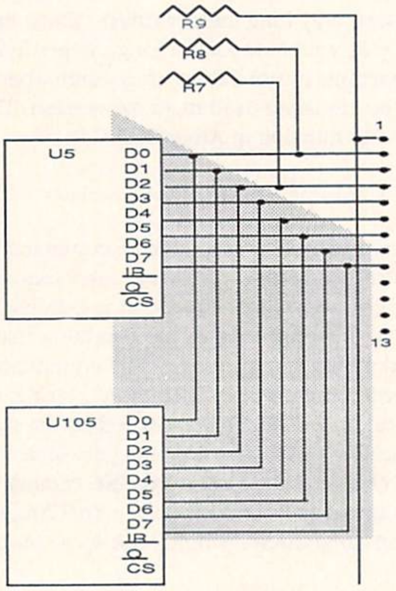
Another function in the dos library relevant to this discussion is the Open function. Open opens a path to any mounted Amiga input or output device and returns a value, called a handle, that can be used to reference the input or output path. The syntax in AmigaBASIC for Open is:

```
handle& = xOpen& ( name, accessmode )
```

The handle& is a long integer variable that contains the handle used to access the opened path. The name is just a string consisting of the name of the i/o device. It is passed the same way as the string in the Execute function; that is, it is terminated with a null character and the beginning memory address of the string is passed, rather than the string itself. The accessmode may include one of three values. The first possible value is 1004, which tells the Amiga to open a file for input and output. The second value, 1005, tells the Amiga to open a file

Corrections

Two errors appeared in the article *Building the Amazing Stereo Audio Digitizer* (V4.5). The following diagram is a correction of Figure Two which appeared on page 37.



Also, on page 40 of the *Audio Digitizer* article, Table One should have appeared as follows:

Table One-Parts List

QTY.	Part reference	Decription
9	R2,R4,R5,R7,R8,R9 R102,R104,R105	1/4 W 1K resistor

In the *Inside ULTRCARD* article (V4.7, page 27), Intuitive Technologies' address was listed incorrectly. The company's correct address and phone number is:

2700 Garden Road Ste. 6
Monterey, CA 93940
(408) 646-9147

In the Bug Bytes column (V4.7, page 80), a hardware designer's name was misspelled. The designer of the AGA 2000 flickerFixer board is Peter Selverstone.

We apologize for these errors and any difficulty or inconvenience that may have been caused.

for input. The third possible value, 1006, tells the Amiga to open a new file for output. Since Open is a function, it must be declared with the AmigaBASIC DECLARE FUNCTION statement before it may be used. The x prefixed to the word Open will be explained shortly. To open an output path to NIL:, one could simply type:

```
out& = xOpen& ( SADD( "NIL:"+CHR$(0) ), 1006 )
```

The last library routine we will use in this discussion is actually a subprogram. The Close subprogram closes an input or output path opened by the Open function. Since Close is a subprogram and not a function, it does not need to be declared as a function, nor does it have to appear in an expression. It must, however, be executed by itself - like all other AmigaBASIC subprograms. Closing a path opened by the above statement is as easy as typing:

```
xClose ( out& )
```

Because Close does not return a value, there is no reason to append & to its name; but its parameters must still be passed as long integers. But, wait a minute. There's that little lower case x again. Maybe it's about time I explain this little phenomenon.

The 1.3 difference

Those who have used AmigaDOS 1.2 with AmigaBASIC (I assume I am speaking to the majority) may have tried to use a little routine that allows BASIC to read a directory using the dos library's Execute function. This routine works fine as long as AmigaBASIC is started from the CLI. However, running AmigaBASIC from the Workbench, via icons, and attempting to execute this routine will cause a visit from the Guru. Most people purchase the Amiga because of its Intuition interface and ease of use. The last thing they want is to have to do use the CLI and the keyboard to perform a function better accomplished by two clicks of the mouse. Have faith, though, for there is an answer.

According to the documentation on the Execute function in The AmigaDOS Manual, Execute uses the current output window, unless one is provided for it. In either case, Execute MUST have an output window. When AmigaBASIC is run from the CLI, that CLI window becomes Execute's output window. However, Workbench does not open an output window for each application that is executed via icons.

So now we know two things: 1) Workbench does not open an output window for AmigaBASIC; and 2) the dos library's Execute function must have an output window to function (no pun intended) properly. Since Workbench does not provide an output window for AmigaBASIC, the Amiga crashes when an AmigaBASIC program containing Execute is run from the Workbench.

To compensate for the Workbench's lack of an output window, we must open our own. This is accomplished by using the Open function. There's only one problem: the 1.2 dos.bmap lists the Open function as Open. Unfortunately, BASIC also has a command called OPEN. An attempt to call the function Open would be misinterpreted as an improper usage of the AmigaBASIC OPEN statement. The same dilemma exists for the Close function. On the other hand, the 1.3 dos.bmap file lists Open as xOpen, and Close as xClose. By prefixing an x to these troublesome names, they may be used in AmigaBASIC without any conflicts.

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Other library functions known to conflict with AmigaBASIC reserved words are:

```
abs          Exit        Input
Output       Read        tan
Translate    Wait        Write
```

Each of these functions may be used by prefixing an x to its name. If you are skilled enough, you may wish to modify the 1.2 version of ConvertFd, allowing it to make .bmap files with these changes in spelling. On the other hand, if that sounds a little too complicated, then this may be the perfect incentive to finally invest in the 1.3 operating system. Either way, the demo program provided in this article may still be executed from the CLI, after some minor changes.

Now that we know why Open is addressed as xOpen,we need to use it to open an output window. The output window we will use is NIL: , or essentially, nothing. Under normal operation, the Execute function will never use this output window, so there is no reason to see it. Also, NIL: requires less memory than an AmigaDOS window; it will not clutter the screen; and it satisfies the Execute function's craving for an output window. Opening a path to NIL: could be accomplished with the Open statement mentioned previously.

Explanation of the program

The program in Listing 2 illustrates a practical application of these library commands. Its purpose is to read a C: directory and copy specified commands to the ram device of the user's choice.

The batch file in Listing 1 must be typed into a text editor and saved under the name CopyFiles.BAT before the demo can be run. The first line of the file is the .key command that declares three variables: sdir, ddrir and filename. After declaring the variables, the file makes the source directory (sdir) the current directory. If the destination C: directory (ddir) does not exist, the file creates one. Following then, it executes the batch file (ram:Copy.List) created by the demo program and assigns the C: directory to the destination directory. When it has finished, the file turns the current directory back over to SYS:.

If you are going to be using the 1.2 version of dos.bmap, and executing AmigaBASIC from the CLI, then there are a few changes that should be made to the program. First, omit the first DECLARE FUNCTION statement that declares the xOpen function. Next, the statement,

```
out&=xOpen&(sadd(“NIL:”+n$),1006)
```

should be changed to

```
out&=0
```

and the statement containing the xClose function should be deleted. The last thing to be changed is the way the program is executed. The program must now be executed from the CLI by typing:

```
1> AmigaBASIC “Demo”
```

Other than the calls to subprograms, the demo program executes in basically the order that it is written, so it should be fairly easy to follow. Because the format of this magazine is restricted to 60 characters per line, some of the command strings in the Execute functions were defined in previous lines and then inserted as string variables. As a result, the code is much easier to read. However, this method takes up more space in memory, and it really isn't necessary. A few subprograms do need some further explanation, though.

The first one is the MountList subprogram. Using the Execute function, this subprogram executes the AmigaDOS INFO command, directing its output to a file in ram: called temp. The INFO command provides a listing of information on currently mounted i/o devices. The subprogram loads this information into one variable.

"Why one variable?", you ask. Because it is much faster than using a separate variable for each line in the file. Also, checking for a mounted device is as easy as using the AmigaBASIC INSTR command. If the INSTR command returns a zero, then the device we are searching is not mounted. The information obtained by the INFO command is passed back to the main program through the parameter, mounted$, of MountedList.

The Dir subprogram is the most important of the subprograms. It uses the Execute function to execute the AmigaDOS LIST command, directing its output to a file in ram: called temp. The directory listed is the source C: directory, which is passed through one of Dir's parameters, volume$.

Once temp has been created, another file, temp2, is created and used to hold the names of the commands which are extracted from temp. After the commands have been extracted and temp has been killed, the Execute function is used once again to execute the AmigaDOS SORT command. Temp2, which holds the list of C: commands, is sorted, and the resulting list is stored in temp. The final, sorted list of C: commands in temp is loaded into an array called command$(). This final list is the one from which the user can choose the commands to be copied.

The routine marked as Construction of a Batch File shows how a batch file may be created from within an AmigaBASIC program. The program must open a sequential file and use PRINT# (instead of WRITE#) to send the information to the file. The WRITE# statement inserts delimiters (i.e. commas, quotes, etc.) which will corrupt the batch file in the eyes of AmigaDOS.

On the other hand, the PRINT# statement will send information to the file exactly as it is specified by the programmer. Those who compile their AmigaBASIC programs can benefit greatly from creating batch files under program control. A program that creates the batch files that it needs would become completely independent ; instead of ARCing 2 files (the program and the batch file) for distribution, only one would have to be ARCed.

The final section of the program, just before the subprograms, is used to execute the batch file CopyFiles.BAT. There are two ways to execute a batch file from AmigaBASIC. One

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One of the slogans I recall from high-school physics is that "Starting friction is greater than moving friction." This certainly is the case with the 5.0 compiler. Take, for instance, the use of precompiled headers. They are mentioned in the Preface as a way to speed up compilation, but otherwise the Master Index is unhelpful.

Reading through the options for the LC command, you will find one switch, -ph, that will generate precompiled headers, and another, -H, that uses them. Still it may be unclear how to best take advantage of this feature. Keep searching; eventually an item in the Upgrade Guidelines will provide the missing clue.

Put all the include files used by all your modules in a single file with a dummy routine:

```
#include <first include file>


#include <last include file>

void dummy(){}
```

Compile this dummy program with the -ph option of LC to produce a .Q file containing all the symbol information in those include files. Now, instead of looking through all the include files every time you recompile your program, that information is provided in a single file referenced through the -H option.

Since version 4.0, Lattice has provided "compacted" versions of the header files that significantly reduce file size at the cost of ASCII intelligibility. With 5.0's ability to precompile the specific headers your program needs, you have the advantage of speedy access without sacrificing the readability of the includes.

Prototyping

A number of advantages of the Lattice 5.0 compiler derive from using prototypes (declarations that specify what parameters of what kinds each function expects). For example:

```
long Read(BPTR file, char *buffer, long length);
```

If you look up prototype in the Master Index, you will again be disappointed. Here are some things they can do for you.

The first benefit is error checking. The compiler will catch calls that use the wrong number or kinds of parameters. These types of mistakes have bitten me often in the past with C, and I'm sure I'm not alone.

A second benefit comes from using prototypes with #pragma statements. Once again, Lattice's "official" documentation is a bit frustrating. However, you will find a discussion of why and how to use pragmas, plus a wealth of other information, in a supplementary file called ADDENDUM.DOC.

The most direct way to take advantage of this capability is using the "proto" include files. These contain prototypes of the system routines (like Read, etc.), plus corresponding #pragma statements:

```
#pragma libcall DOSBase Read 2a 32103
```

This tells the compiler that the Read function is available at a -0x002a offset from DOSBase library pointer.

The funny number at the end encrypts the information stating that the input parameters are in D3, D2, and D1, the output parameter is D0, and that there are 3 input parameters. You need not worry about these details for system calls, because the proto includes provide it for you. Once included, the prototypes plus the pragmas enable the compiler to simplify system calls.

Ordinarily, all parameters get pushed on the stack for a call to an intermediate routine in AMIGA.LIB that takes them back off and puts them in the appropriate registers. But now the parameters will be put directly into the proper registers and you will bypass AMIGA.LIB, saving both time and space.

You can use this approach for your own libraries as well. Lattice recently released information on BIX and PeopleLink about some of the more advanced features, and hopefully it will show up soon in their official documentation. A program called FD2PRAGMA is provided to simplify the construction of #pragma statements.

A third benefit of prototyping comes from using it with the -rr option. This causes prototyped routines in your own code to be called using registers, instead of with the usual stack conventions. Here again, there is the potential for faster and smaller code (but see the discussion of optimization below).

New keywords

Lattice 5.0 implements a number of powerful keywords for controlling the character of variables and routines. Details on their usage are found in ADDENDUM.DOC. With __chip you can determine the kind of memory allocated for variables. For example:

```
extern char __chip buf(BUFLEN);
```

And with __near and __far (__huge) you can determine whether 16 or 32-bit addressing will be used for external data items:

```
extern int __near *ptr;
```

There are also powerful keywords for functions. With the __regargs keyword you can do on a routine-by-routine basis what -rr does for your code as a whole. That is, providing you have specified a prototype, it will cause a function to be called with registerized parameters:

```
void __regargs somefunc(char *a, long b);

    ...

void __regargs somefunc(char *a, long b);
{
    ...
}
```

Or you can use __stdargs to guarantee the normal stack conventions for a particular routine, even though you compile with -rr. Even more interesting is the __asm keyword. In conjunction with keywords for each of the 68000 registers (__a0 to __d7), you can determine exactly which parameter gets sent to which register.

For example:

```
long __asm foo(char register __a0 *ptr);

...

long __asm foo(char register __a0 *ptr);
{
    ...
}
```

This is potentially very useful for specifying registerized interfaces for your own assembler routines.

I say "potentially" because currently there is a bug in __asm. If you use something other than the Amiga scratch registers (A0-A1/D0-D1) there is no guarantee that the calling routine will save them first. However, by the time you read this, that bug may have been fixed. Also, do not use the -cr option because it is incompatible with the use of __asm.

Global optimization

We have already seen a number of provisions for optimizing code—making it smaller, quicker, or both. This includes LPROF & LSTAT, the use of pragmas with library calls, and -rr and __regargs for further registerizing. Indeed, in one respect Lattice seems to have "over optimized": their 32-bit divide routine CDX33 no longer checks for divide by zero.

Still, this is a powerful and impressive array of optimization tools. It is topped off with a global optimizer, GO, that can reduce program size by over 10%, with commensurate speed advantages. GO has some nice capabilities, though there are ways in which it might be improved. It does not replace a good assembly language programmer, but it writes pretty decent code for a machine.

The optimizer is available in LC via switch -O. The first thing you will notice when using it is that it catches "dead assignments" at the symbolic C level and eliminates them. The second thing you will notice is that compiles can take a lot longer—up to four times longer in some cases. To avoid this penalty, you can defer optimization until you have otherwise refined and debugged your software.

GO does some nice things. It tries to make sure the most frequently used parameters and variables are put in registers, and it favors register over memory operations. Loop construction is simplified, and index variables are sometimes entirely eliminated (folded into increments, offsets, and displacements).

One of the bugs I found reveals just how clever some of these optimizations can be. The subtraction of a constant from an array index was eliminated, transformed instead into a register offset value. However, because that constant was so large, when it was multiplied by the array size it resulted in a value that overflowed the 16-bit displacement.

There are ways in which GO might be improved. The first optimizing compiler I ever encountered was for Pascal, of all things. It impressed me by recognizing that if a mod of two values (in C, a % b) was followed by a div (a / b), the divide routine need only be called once. GO does not yet have this trick.

If you look at code generated by the optimizer, you will see that sometimes it insists on register operations even when this wastes steps. Though dead assignments are caught at the symbolic level; they are often overlooked at the register level. Loop construction could be further improved by moving the initialization of constants outside the loop.

Finally, using D0-D1/A0-A1 as scratch registers sometimes conflicts with using them with -rr or __regargs for passing parameters in subroutine calls. In one example, the called routine pushed other registers on the stack, and unloaded the scratch registers into them before proceeding. Combined with the use of LINK and UNLK even when no local storage is necessary, the advantage of registerized parameters can be lost.

way is to use the xOpen function to open an input path from the batch file and use that as the input path for the Execute function, such as

```
in&=xOpen&( SADD("CopyFiles.BAT"+CHR$(0)), 1005)
x=Execute&( SADD(CHR$(0)), in&, out&)
```

However, there doesn't seem to be any way of passing parameters using this method. So, in this program we use the dos library's Execute function to execute the AmigaDOS EXECUTE command. In other words, we are executing the batch file from AmigaBASIC as if we were executing it from the CLI. A command string in an Execute function, such as

```
"Execute CopyFiles.BAT RAD:c ram:c ram:Copy.List"+CHR$(0)
```

would have the same effect as typing the following from the CLI:

```
1> Execute CopyFiles.BAT RAD:c ram:c ram:Copy.List
```

One final note: when you use the xOpen function, it is important that you execute the xClose subprogram before exiting the program. Each time the program is executed, AmigaDOS gives the xOpen function a new handle. This means if you stop the program before the output path is closed, make changes to the program, then rerun the program, you WILL NOT be able to close the previous output path.

Because the handle is stored in an AmigaBASIC variable, it is initialized the next time the program is run. Doing this several times produces several open output paths (which take up precious memory) that cannot be closed. These paths will remain open until the Amiga is rebooted. Someone may say, "I don't care, I have eight megabytes! I have plenty of memory to spare!" Well, there is one more side effect of leaving those output paths open that will become apparent in a moment.

Debugging hints

Before diving into a new and ambitious programming project using these techniques, there is one thing a programmer should keep in mind. Since most of the library operations in a program of this type take place behind the scenes, debugging can be extremely frustrating. However, there are a few simple things that can be done to help the bewildered programmer.

First of all, if a program seems to have skipped operations in the batch file or has performed them incorrectly, review the contents of the batch file. Misspelling an AmigaDOS command will cause that particular operation to fail, making it appear as though the operation has been skipped. Also, check for proper pathnames. If the batch file contains a command such as

```
DELETE ram:<filename>
```

then be certain that the name of the file in filename is not preceded by a colon. Otherwise, the Amiga would execute the above command as

```
DELETE ram::filename
```

Once the batch file has been given a clean bill of health, the call to the dos library's Execute function within the AmigaBASIC program should be attacked. The best way to distinguish between a flaw in the batch file and a flaw in the program is to execute the batch file from the CLI, inserting the predicted parameter values into the command string. If the file works, the

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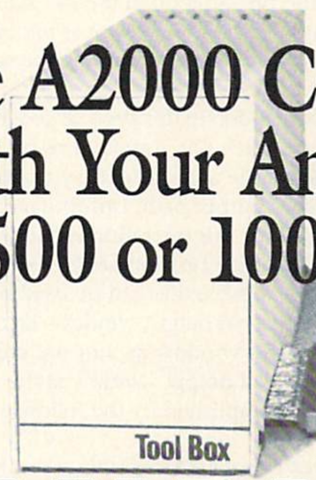

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problem is within the program. The most likely suspect, in this case, would be the punctuation in the call statement. One small mistake in punctuation could possibly prevent all parameters from being passed, crippling the operations of a batch file.

Another way to debug this type of program is to monitor the progress of the batch file. Any failures by an AmigaDOS command in a batch file are reported in a brief message that is sent to the specified output path. Unfortunately, the output path normally used for this operation is NIL:, which cannot be seen. However, NIL: may be replaced by CON:. CON: is the AmigaDOS window device that can be used by the xOpen function to open a visual output window. Error messages may then be read from this window as they are created.

Opening a small output window at the bottom of the screen could be accomplished by the following statement:

```
out&=xOpen&(SADD(“CON:0/150/640/50/Debug Window”+n$),1006)
```

This statement would open an output path to an AmigaDOS output window appearing flush to the left of the screen, with its top beginning at the 150th pixel (3/4 of the way down the screen). It would have a width of 640 pixels, a height of 50 pixels, and an optional title, Debug Window, in the titlebar. Any error messages created by a batch file would show up in Debug Window. However, the next PRINT statement would force AmigaBASIC's current output window to the front, hiding the newly created Debug Window. The AmigaBASIC output window, therefore, should be resized to reveal the AmigaDOS output window.

Caution should be taken when using an AmigaDOS CON: window for debugging. As mentioned earlier, failing to close an output path before exiting or restarting a program can render portions of the Amiga's memory unusable to other software applications. With the addition of the CON: device, screen space is also sacrificed. Moreover, if enough of these pesky windows are accumulated, there could be a significant lag in window and screen updates. Regrettably, the only solution to this sort of dilemma is to save anything of value residing in RAM and reboot the machine.

With a little practice and experimentation, the programming techniques described here can open a multitude of doors for the AmigaBASIC programmer. Since any AmigaDOS command may be executed using the Execute function, a personalized directory utility program might be an appealing project for a few thrill-seeking souls. Don't be afraid to try something new—it just may work.

Listing One
CopyFiles.BAT

```
;This batch file must be named CopyFiles.BAT
.key sdir,ddir,filename

sys:c/Cd <sdir>
sys:c/If Not Exists <ddir>
   sys:c/MakeDir <ddir>
EndIF
sys:c/Execute <filename>
sys:c/Assign C: <ddir>

sys:c/Cd SYS:
```

Listing Two
Batch File Demo

```
'************************************
‘**         Batch File Demo         **
‘**        By Mark Aydelotte        **
‘**  Written For Amazing Computing  **
‘************************************
‘
n$=CHR$(0)
LIBRARY “dos.library”
‘Omit this first function declaration if using 1.2’s
‘  dos.bmap.

DECLARE FUNCTION xOpen& LIBRARY
DECLARE FUNCTION Execute& LIBRARY
DIM command$(150),filenum(150)
‘Set rootdir$ equal to the full pathname of CopyFiles.BAT,
‘  including a “:” or “/” at the end of a volume name or
‘  directory, respectively.
rootdir$=”Batch Demo:BASIC Stuff/”
‘Use “out&=0” if using 1.2’s dos.bmap.
out&=xOpen&(SADD(“NIL:”+n$),1006)
CALL MountList(mounted$)
‘
‘Get source and destination volumes.
‘
Do.Volumes.Over:
CLS
PRINT “Enter the volume name of the C directory from which”
PRINT “  you wish to copy commands.”
PRINT
LINE INPUT “-> “;sorcvol$
CALL FixName(sorcvol$)
skip(2!)
PRINT “Now enter the volume where you wish to store these”
PRINT “commands. (RAD:, RAM:, or VD0:)”
PRINT
LINE INPUT “->”;destvol$
CALL FixName(destvol$)
IF INSTR(mounted$,destvol$)=0 THEN
  skip(5!)
  PRINT destvol$;” IS NOT MOUNTED!!! TRY ANOTHER.”
  FOR x=1 TO 5000:NEXT x
  GOTO Do.Volumes.Over
END IF
CLS
PRINT “The source C directory shall be found in volume...”
PRINT “  “;sorcvol$
skip(2!)
PRINT “The destination C directory shall be in volume...”
PRINT “  “;destvol$
skip(2!)
CALL Ask(answer$)
IF answer$=”N” THEN Do.Volumes.Over
PRINT “Enter the number of the file(s) to be copied one at”
PRINT “  a time, or [U] to scroll Up or [D] to scroll Down.”
PRINT “[  0]... Enter 0 when finished”
PRINT USING format$;copy;command$(copy)
first=1
last=15
num=0

Update.Display:

CALL Display(format$,count,first,last)
PRINT
INPUT “What is your selection”;s$
s=VAL(s$)
s$=UCASE$(s$)
IF s$=”U” THEN
  first=first-15
  last=first+15
  GOTO Update.Display
ELSEIF s$=”D” THEN
  first=first+15
  last=first+15
  GOTO Update.Display
ELSEIF s$=”0" THEN
  GOTO finished
ELSEIF s=copy THEN
  filenum(1)=s
  num=1
  GOTO finished
ELSEIF s>=first AND s<=last THEN
  num=num+1
  filenum(num)=s
END IF
GOTO Update.Display
‘
‘Let user confirm selections.

finished:
CLS
WIDTH 70,40
IF num=1 THEN
  PRINT “Your selection is...”
ELSE
  PRINT “Your selections are...”
END IF
PRINT
FOR x = 1 TO num
  PRINT USING format$;filenum(x);command$(filenum(x)),
NEXT x
skip(2!)
CALL Ask(answer$)
IF answer$="N" THEN Do.Selections.Over
'
'***  Construction of a Batch File  ***
'
CLS
skip(11!)
PRINT SPC(27);"Constructing batch file..."
filename$="RAM:Copy.List"
OPEN filename$ FOR OUTPUT AS #1
FOR x = 1 TO num
'
'Make an executable batch file that copies...
'
IF filenum(x)=copy THEN
 '
 '...the entire C directory, or...
 '
 PRINT #1,"COPY "+sorcvol$+" TO "+destvol$+" ALL Quiet"
ELSE
 '
 '...just the commands that the user chose.
 '
 PRINT #1,"COPY "+command$(filenum(x))+" "+destvol$+" Quiet"
END IF
NEXT x
CLOSE #1

CLS
skip(11!)
PRINT SPC(29);"Calling Batch File..."
'The following string assignment can be omitted and the
'  contents may be inserted directly into the Execute& call.
c$="CopyFiles.BAT "+sorcvol$+" "+destvol$+" "+filename$+n$
x=Execute&(SADD("Execute "+rootdir$+c$), 0, out&)
CLS
skip(11!)
PRINT SPC(34);"ALL DONE!!!"
'IMPORTANT!!!!! Don't forget the xClose statement or you'll
'  have a mess on your hands when debugging.
xClose(out&)
LIBRARY CLOSE
KILL filename$
'
'——————— Subprograms ———————————
'
SUB FixName(volume$) STATIC
  'This subprogram takes the user's volume names & converts
  '  them to acceptable Amiga i/o device names.
  volume$=UCASE$(volume$)
  IF RIGHT$(volume$,2)=":C" THEN
    volume$=LEFT$(volume$,LEN(volume$)-1)
  ELSEIF RIGHT$(volume$,1)<>":" THEN
    volume$=volume$+":"
  END IF
END SUB

SUB skip(numlines) STATIC
  'Just take a guess at what this subprogram does.
  FOR x=1 TO numlines:PRINT:NEXT x
END SUB

SUB MountList(mounted$) STATIC
  'This subprogram loads a list of currently mounted i/o
  '  devices into the variable "mounted$."
  SHARED n$,out&
  x=Execute&(SADD("info >ram:temp"+n$), 0, out&)
  OPEN "ram:temp" FOR INPUT AS #1
    mounted$=INPUT$(LOF(1),#1) 'loads the entire file into
                               'one variable
  CLOSE #1
  KILL "ram:temp"
END SUB

SUB Dir(volume$,count) STATIC
 'This subprogram reads the source C directory, alphabetizes
 '  it, and stores the filenames in "command$()."
  SHARED n$,out&,command$()
  count=0
  x=Execute&(SADD("list >ram:temp "+volume$+n$), 0, out&)
  OPEN "ram:temp" FOR INPUT AS #1
  OPEN "ram:temp2" FOR OUTPUT AS #2
  LINE INPUT #1, temp$
  WHILE NOT EOF(1)
  LINE INPUT #1, temp$
  IF INSTR(temp$,"ile -")=0 AND INSTR(temp$,"iles -")=0 THEN
    IF INSTR(temp$,".info")=0 THEN
      position=INSTR(temp$,"   ")
      IF position=0 THEN position=27
      count=count+1
      PRINT #2,LEFT$(temp$,position-1)
      IF count=150 THEN Stop.Now
    END IF
  END IF
  WEND
 Stop.Now:
  CLOSE #2
  CLOSE #1
  KILL "ram:temp"
  'Alphabetize the directory listing.
 x=Execute&(SADD("sort >nil: ram:temp2 ram:temp"+n$),0,out&)
  KILL "ram:temp2"
  OPEN "ram:temp" FOR INPUT AS #1
  FOR x=1 TO count
    INPUT #1, command$(x)
  NEXT x
  CLOSE #1
  KILL "ram:temp"
END SUB

SUB Display(format$,count,first,last) STATIC
  'This subprogram simply updates the selection display.
  SHARED command$()
  SCROLL (0,32)-(639,190),-513,0
  IF first>count THEN first=first-15
  IF first<1 THEN first=1
  IF last<=1 THEN last=first+15
  IF last>count THEN last=count
  LOCATE 5,1
  FOR x=first TO last
    PRINT USING format$;x;command$(x)
  NEXT x
END SUB

SUB Ask(answer$) STATIC
  'This subprogram asks a yes or no question and returns
  '  either a "Y" or an "N."
  WHILE INKEY$<>"":SLEEP:WEND
  PRINT "Is this correct: [Y]es or [N]o?"
key:
  answer$=UCASE$(INKEY$)
  IF answer$<>"N" AND answer$<>"Y" THEN key
END SUB
```

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By M. J. Bernier

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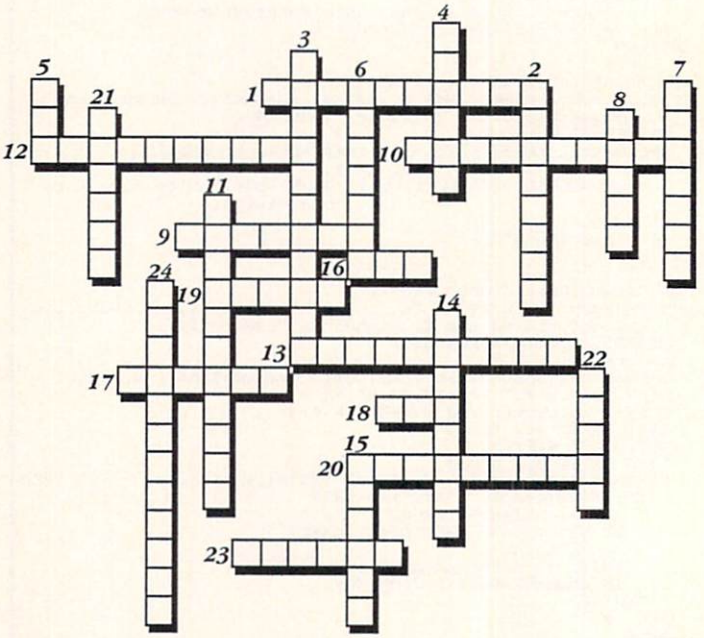
Refer to page 108 for answers to **HARD**Copy, *July 1989.*

Crossmania

1. Process of generating 3D images by calculating beams of light (2 words)
2. *MovieSetter's* developer (2 words)
3. A *Broderbund* animation software package
4. Disney's first animated and talking character
5. Standard file format that graphics are saved as
6. *New Tek's* awaited color digitizer, Video ______
7. This synchronizes external and internal video sources
8. A leading manufacturer of 35mm cameras
9. ______ Industries, maker of *Perfect Vision*
10. This is sharpness of images varying with scanlines
11. *Impulse's* ray tracing program that produces images viewable with 3D glasses (2 words)
12. Developer of the new *Media Line* fonts package (2 words)
13. A unit of measurment equal to one thousandth of a millionth of a second, used to count display time of pixels
14. Mysterious man behind the monitor in a 1988 softdrink campaign
15. Authors of Amiga instructional books including, *Amiga 3D Graphic Programming in BASIC*
16. Port on the Amiga the genlock utilizes for information
17. Lights, Camera, ______!, by *Aegis*
18. Computer Aided Design (abbr.)
19. Language used to program graphics *from* your Amiga
20. A programming term that describes a plan for problem solving
21. *Communications Specialties'* genlock encoder (2 words)
22. *Mimetics'* ____ Buffer, allows increased pixel resolution
23. *Haitex* developed these 3D glasses creating "stereo vision"
24. *Micro Way's* graphics adaptor that eliminates visible scanlines (2 words)



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On Your Alert:

Using System Alerts from BASIC

by John F. Wiederhirn

In the first part of this series, we discussed using requesters from BASIC and provided a set of routines which allowed BASIC programmers to set up and call the system requester routines from within BASIC. In this article, we will move a step further and provide another type of system message callable from BASIC.

Scenario: your home budget program is almost complete. You've used the system requesters to fine tune your user interface to a new level of fit-and-finish. Still, something seems to be missing. There are times when you really need to get the user's attention—like when they are about to do something that will have catastrophic results, or when the program realizes it has a problem, and you want to tell the user to cut their losses and save their files before everything falls apart.

Somehow, using a requester box for these messages is just too ...nice. There are times when you need to make an impression on the user. Make them turn their attention from a background program. With a requester box, users can continue working on other items, ignoring the message until they are ready to deal with it. However, the next message the user receives could very well be "Software error - task held" or, even worse, a visit by the Guru himself. We need a message which preempts everything else, and forces the user to respond.

The Guru is a nifty way the system has of immediately getting user attention (not that it really matters at that point). Wouldn't it be nice if you could put up custom "alert" boxes with your own message inside? Just the sight of the flashing red box is enough to get anyone's attention. To top it all off, the system would also preempt other activity, and disable the mouse pointer as well. The best part is that the system uses a routine to do this which we can adjust to suit our own needs. Not only is it possible but, once you understand the mechanism, it is actually sort of easy.

Once again we will use AmigaBASIC's built-in extensibility through the DECLARE FUNCTION...LIBRARY constructs to "hook" onto the necessary system routines, making them available for use in BASIC as "regular" commands and functions, and each of them will be discussed in the next section. Some of these may look familiar, as we used a couple of them last time in the requester program, and I will only briefly recap those, while the new routines will be covered in detail.

Both of the programs listed here use the BASIC command LIBRARY to open the Intuition and Exec libraries. To do this from BASIC, you need to have the "intuition.bmap" and "exec.bmap" files, either in the current directory when the program is run, or the libs: directory of your Workbench disk. If you are missing either of the .bmap files needed, you can make them using the "ConvertFD" BASIC program found on your Workbench Extras disk. For more information on .bmap files, and the "ConvertFD" program, consult the AmigaBASIC manual.

Type in the demonstration programs. The first is a sample use of the alert routines, which puts a customized alert on the screen, and reads the user's response. The second is a more elaborate demonstration covering the use of both requesters and alerts from within the same program. It attempts to mimic the requesters and alerts associated with a system crash, but finishes leaving the system unharmed, and in the same "condition" as before it was run. Once the programs have been individually typed in, SAVE THEM! These programs use certain routines which can easily crash the system if there is even a minor typo in their code. Should that happen, if the program wasn't saved, chances are you're going to have to type in the entire program again.

Once the programs have been entered and saved, run each one several times. Both programs must be run in 80-column mode, this allows the text in the alerts and requesters come out properly aligned. Set preferences accordingly. Get to know how it "feels" to use the alerts. Then when you are ready, finish the article and pay particular attention to the information covering the new routines and the line-by-line explanations of the programs. The BASIC subprograms were designed to be modular, and once you understand their operation, feel free to include them in your own programs, modifying them to your needs.

"Old" system routines

Those of you who are familiar with the operation of the AllocMem, FreeMem, and CopyMem routines (from the previous article, or similar experience) may wish to skip ahead to the next section on the new routines used, as I am going to briefly review operation and calling methods for these routines from BASIC. One important note to the readers of the previous article: When I explained how to call FreeMem and CopyMem from BASIC I declared them as functions, and used "dummy" variables to make them work properly. This was so the programmer reading the article could easily see that these were system routines called from a library. However, although the previous method works fine. I am switching to a more "standard" method, assuming the reader is aware that these are system library routines. Most notably, they are called using the CALL command, and are treated as subprograms rather than functions. This is because they do not actually return a value to the calling program. The "type extender" (&) must still be left at the end of their names when declared and called. From now on, when these routines are called. This is the method I will use.

To call the system routine used to generate alerts, a number of pieces of information must be supplied. One of these is a formatted string containing the message to be displayed in the alert. While the formatting of that string, and the other parameters will be discussed in the section on the new routine, there are other routines which are used to provide the routine with the information in the proper manner.

> Wouldn't it be nice if you could put up custom "alert" boxes with your own message inside? Just the sight of the flashing red box is enough to get anyone's attention.

AmigaBASIC has a tendency to move the actual location of string variables' data around in memory for efficiency reasons. While this causes no problem in BASIC, the system routines we are using need to know the address of where the data being passed to them is located. For this reason, we can't just hand them the string variable itself. Instead, we must set aside a block of memory which will not be moved by BASIC, and put the string data in that block. We could just arbitrarily choose a block of memory, but because we don't really know what areas of memory are safe to modify and use, this approach could easily result in system crashes. Instead we use the system's AllocMem routine to find a block which we can use. Do this by giving it the size of the block we need (in bytes). This block is guaranteed to be both safe to use, and safe from use by other programs. Declared like other system functions, and found in the Exec library, the AllocMem routine is called from BASIC like this:

```
address& = AllocMem&( size&, type& )
```

The size& variable tells AllocMem how many blocks we need, and the type& variable tells it what kind of memory is needed (in our case, we set type& to 65537 which tells AllocMem to give us whatever kind is available, and to "clear" the block before giving it to us). AllocMem then returns either the address of the block or a zero in the address& variable. If it returns a zero, it couldn't allocate a block the size we need. For us this usually means the system is so messed up that we should tell the user to reboot and try again.

Once we have the address of the memory we will store the data in, we use the CopyMem routine to quickly copy the data from the string variable into the "safe" memory block. CopyMem is in the Exec library, and it is not a function, so we do not have to DECLARE FUNCTION...LIBRARY it, but instead just need to open the Exec using LIBRARY "exec.library". To call CopyMem from BASIC use this code:

```
CALL CopyMem&( source&, destination&, size&)
```

Source& is the address where the data is to be copied from (in this case the string variable), destination& is address where the data is going (our "safe" memory block), and size& is the number of bytes to be copied. Using this routine is MUCH faster than doing the same thing with a loop in BASIC.

Finally, once we are done using the allocated block of memory, we need to tell the system it can use it again. Otherwise, it has no way of regaining access of the block short of rebooting, and the amount of free memory would go down every time the program was run. Tell the system an allocated block of memory is available for use again by calling the FreeMem routine from the Exec library. This routine is like CopyMem in that it does not need to be declared to be used. We just open Exec and call it like this:

```
CALL FreeMem&( address&, size& )
```

Address& is the address of the block we received from AllocMem, and size& is the number of bytes we allocated. As stated in the previous article, FreeMem is a potentially dangerous routine to use. You MUST give it the exact address returned to you by a call to AllocMem, and you must give the exact number of bytes allocated in the block. If either of these values is in error, a system crash is virtually certain.

Those are the "old" routines which we use in this program. Note that the calling subroutines to allocate and free the memory blocks have been changed for alerts, reflecting the different formatting of alerts as opposed to requesters. Now onto the new stuff...

The DisplayAlert Routine

The routine that the system uses to display those Guru Meditation alerts you most likely have seen is called (appropriately) DisplayAlert. It is declared for BASIC as follows:

```
DECLARE FUNCTION DisplayAlert%() LIBRARY
```

This tells BASIC that DisplayAlert is a system function found in one of the libraries, and when it is called, it returns a short integer value (hence the % after DisplayAlert). It is found in the Intuition library which is opened from BASIC using:

```
LIBRARY "intuition.library"
```

Once Intuition is open, the DisplayAlert function can be called like other system functions by using this code:

```
response% = DisplayAlert%( type&, address&, height& )
```

Type& will always be set to 0& for us, which tells the system we want a recoverable alert, and want the result returned to us. According to the ROM Kernal Manual: Libraries and Devices (one of the Amiga system programmer's holy books) allows the possibility that if the system is in bad enough shape, the alert may be automatically upgraded to non-recoverable status (DeadEnd in RKM parlance). This is just a warning of a remote possibility however, and I have a feeling that BASIC would crash itself before the system got that messed up. I have never had an alert get upgraded, but just in case one does, now you know why.

Height& is the number of pixels it will take to contain the entire vertical height of the alert. This is a number which I had to fine tune a little bit to get the results I wanted, but so far the following formula seems to work:

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height& = 8 + (10 * number of lines of text in alert)

This seems to give enough vertical room for the alert without spacing things out too much. When the programs are explained, I'll point out where this is calculated so that you can change it to your own preferences. Be forewarned, you can generate some pretty strange displays if height& isn't large enough, or is too large.

Now things start to get complicated. The address& parameter is the address of a block of memory which contains specially formatted data representing the text of the alert, line by line. This text is not in the IntuiText format used by requesters and most other Intuition routines, but instead is in a custom format used only for alert messages. The data is composed of a number of sequential substrings, one for each line (or section) of the alert text. Each substring has the following format:

Field	Type	Contents
X Pos	Short integer	X position (pixels) of substring text.
Y Pos	Byte	Y position (pixels) of substring text.
Text	ASCII data	Null-terminated string of characters.
More?	Byte	0 = No further substrings. 1 = More substrings follow.

The X Pos and Y Pos fields tell the DisplayAlert routine where each substring's text should be located relative to the upper left corner of the alert. These values can be used to locate pieces of text anywhere inside the alert. Note that a Y position larger than the height& passed to DisplayAlert can have unpredictable results, and probably should be avoided. The same is true of an X Pos larger than the current width of the screen (320 in lo-res, 640 in hi-res).

The Text field contains the ASCII text of the substring text, and is ended with a CHR$(0) (also known as NULL), hence null-terminated. Each substring text can be no longer than the distance in characters from X Pos to the edge of the screen or more strangeness can result. Usually the text wraps around to the start of the same line, but may have other more serious effects.

The More? field tells DisplayAlert if there are any more substrings, thus allowing multi-line alerts and the like by setting all the substrings' More? fields to 1 except for the last one. Pretty straight-forward.

Once the text data is properly formatted, the address of the formatted data is then given to the DisplayAlert routine in its address& parameter. Again be careful, as errors in formatting can cause system lock-ups and crashes.

Finally, the user response is returned in whatever short integer variable has been assigned to receive it, like response% in the code above. The user response is either a 0 indicating the right mouse button was pressed, or a 1 which means the left button was pressed. By analyzing the response, the program can give two choices in the alert and get a selection, just like requester boxes.

When the alert is generated, unlike requester boxes, a couple of things happen: The entire display is shifted down far enough to display the alert inside a flashing red box, and the system is put on hold until the user responds to the alert. This holding of all other system tasks is both useful and problematical. The user has no choice but to respond to the alert, since nothing else can be done until the alert ends. However, I cannot guarantee that holding the system tasks won't cause problems when other programs are running at the same time. One big if would be the effect of alerts on system disk functions called by other programs. The moral is that you must use this routine sparingly, and should check how the programs you use it in affect other system programs. However, BASIC is a processor hog, as evidenced by the slowdown in screen updates while it is operating, that most of the time, BASIC will be the only thing a person runs. The DisplayAlert routine is no problem inside BASIC, and indeed, BASIC even uses it for some special error conditions (Out of Heap Space, for one). One other effect of DisplayAlert is that for the duration of the alert, the mouse pointer is shut off. This has to do with the holding of system functions, and the shifting down of the display. A funny side-effect of the mouse pointer change occurs when the pointer is very near or in the menu bar at the top of the screen when the alert occurs. The alert is displayed, and the pointer is disabled, but the alert shows up with a red vertical bar running from the top of the alert all the way down through the display. This bar disappears when the alert finishes, and seems to do nothing more than mangle the alert. When the alert is complete, the display is shifted back up, the pointer reappears, and everything goes back to normal.

Now that the DisplayAlert routine's function is understood, we'll go through the execution line-by-line for each of the programs.

The Sample Alert Program

Let's take a look at the first program. All this program does is set-up the parameters, and call DisplayAlert, but does so using some modular BASIC subprograms, which can be used in

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any program to display alerts. By the way, I really do apologize for the joke, but I needed some sample text for the alert, so... We'll take this program from the top.

```
CLS
DIM xp%(4), m$(4)
```

At the start of the program, we clear the screen, and dimension two arrays which we will use later to hold the X Pos field, and text for each substring used in the alert.

```
DECLARE FUNCTION AllocMem&() LIBRARY
DECLARE FUNCTION DisplayAlert%() LIBRARY
LIBRARY "exec.library"
LIBRARY "intuition.library"
```

Next, we declare the AllocMem and DisplayAlert system functions, and open the proper system libraries. Again, remember that although we also use the CopyMem and FreeMem routines, they need not be declared when used as subprograms, not functions.

```
PRINT "This is an example of using the DisplayAlert system"
PRINT "routine to make an alert, and get the user's press"
PRINT "of either a left or right mouse button."
PRINT
```

We then display a brief message telling the user what's going to happen next, so the disk access which follows won't surprise anyone, so the user won't see flashing red and think the system crashed.

```
FOR i% = 1 TO 4
  READ m$(i%)
  wx% = INT((640-(LEN(m$(i%))*8))/2)
  xp%(i%) = wx%
NEXT i%
r% = 0
```

Finally, before calling the ALERT subprogram from the main program, we read the text for the alert from the data statements at the end of the main program, use the length of each string read to compute the proper X Pos for each substring in the alert. This is put in the xp%() array. Also, the r% variable which will contain the user's response is cleared.

```
ALERT m$(), xp%(), r%
SUB ALERT ( mess$(), xpos%(), resp% ) STATIC
```

Here is the important call, from the main BASIC program to the ALERT BASIC subprogram, which does everything to put up the alert, and returns the user response in its resp% variable (r% in the main program for us). The ALERT routine takes three variable names, two for input, and one for returning the user response to the main program. The mess$() array holds the text for each line of the alert, while the xpos%() array holds the x-offset for each line.

```
nlines% = UBOUND( mess$ )
aHgt& = 8 + (10 * nlines%)
m$ = ""
```

Inside ALERT, the nlines% variable is set to the number of elements in the mess$() array, which corresponds to the number of lines in the alert. aHgt& is set to the overall height of the alert which will be passed to DisplayAlert. Note the formula which I mentioned earlier can be adjusted to suit your needs. The m$ variable is cleared, preparing it as the string which will hold the formatted data describing the alert text, prior to it being copied into allocated memory.

```
FOR y% = 1 TO nlines%
```

Now a loop is started which will go through each line of text in the mess$() array.

```
wk$ = mess$(y%)
wkx% = xpos%(y%)
wky% = 10 * y%
```

Wk$ is set to the text of the line being formatted, while wkx% and wky% are set to the x and y-offsets of each line. We set wkx% out of the xpos%() array, and can just calculate wky% based on the line being formatted.

```
CALL FormatAlert( wkx%, wky%, wk$ )
SUB FormatAlert( x%, y%, msg$ ) STATIC
```

The FormatAlert subprogram is then called with the x- and y-offsets for each line in wkx% and wky%, and the text for the line in wk$. Inside the FormatAlert subprogram the offsets are called x% and y%, and the text is in msg$. Note that the program returns the formatted substring data in the msg$ variable, which means wk$ for the ALERT subprogram.

```
IF (x%<0 OR x%>320) OR (y%<0 OR y%>200) THEN
  PRINT" Format location error. Check X/Y coord."
```

```
 STOP
END IF
xm% = INT(x%/256)
xl% = x% MOD 256
xy$ = CHR$(xm%)+CHR$(xl%)+CHR$(y%)
```

Inside FormatAlert now, the x- and y-offsets (in x% and y%) are checked to make sure they are within display boundaries, and if not, then an error message is displayed, and the program halted. If the offsets are okay, x% is broken into its individual bytes, and a three-character string is constructed from the two bytes of the x% offset, and the single byte of the y% offset.

```
IF LEN(msg$)>80 THEN
  PRINT" Format line length too long. Check msg$."
 STOP
END IF
```

The msg$ text is checked to make sure it doesn't exceed one screen line in length, and if it does, an error message is printed, and the program stops. This does NOT make sure that starting from the x-offset of the line, that the entire line fits on the display, so you must still check that yourself.

```
a$ = xy$ + msg$ + CHR$(0)
msg$ = a$
END SUB
```

Wrapping up FormatAlert, a$ is formed by appending the msg$ text to the offset data in xy$, and a CHR$(0) is put on the end of the text to make it null-terminating. The newly formatted data is then returned in msg$.

```
  IF y% < nlines% THEN
    wk$ = wk$ + CHR$(1)
  ELSE
    wk$ = wk$ + CHR$(0)
  END IF
  m$ = m$ + wk$
NEXT y%
```

Back out to ALERT, the formatted substring is made complete by appending either a CHR$(1) if more lines follow, or a CHR$(0) if this is the last line (as per the More? field of a DisplayAlert message substring). Each of the substrings is added to m$ so that when the loop is done, m$ contains the entire formatted message string data for DisplayAlert.

```
CALL MkAlert( m$, mAdd&, mSiz& )
SUB MkAlert( msg$, Addr&, Size& ) STATIC
```

Next, m$ is passed to the MkAlert subprogram. The MkAlert subprogram takes a formatted alert message string, in msg$, and returns the size (in Size&) and address (in Addr&) of the memory block used to store the message data.

```
Size& = LEN( msg$ )
```

Inside MkAlert, Size& is set to the number of characters in msg$ which is the same as the number of bytes needed to store the data in msg$.

```
memtype& = 65537&
mAddr& = 0&
mAddr& = AllocMem&( Size&, memtype& )
IF mAddr& = 0& THEN
  PRINT" Memory allocation error."
  STOP
END IF
```

Preparing to call the AllocMem function, we set memtype& to 65537, and set mAddr& to 0& assuring us that we can tell if AllocMem doesn't return an address. AllocMem is called, and the address of a block Size& bytes long is put in mAddr& (hopefully). If mAddr& is still zero, then AllocMem couldn't get the block, so we print an error message and stop.

```
CALL CopyMem&( SADD(msg$), mAddr&, Size& )
```

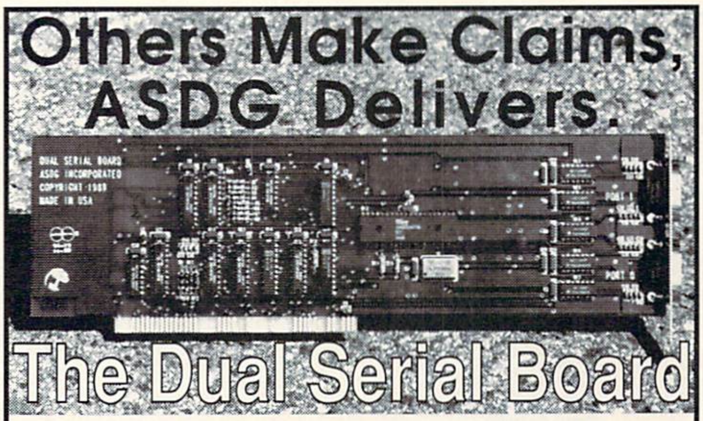
Having a block of "safe" memory to use, we call CopyMem with the source address set to the address of the data in msg$, the destination set to our safe memory, and tell it to copy Size& bytes (the whole msg$ in other words).

```
Addr& = mAddr&
END SUB
```

MkAlert finishes by putting the address of the memory which holds the alert message data in Addr& to be returned to ALERT, and returns execution to ALERT.

```
resp% = DisplayAlert%( 0&, mAdd&, aHgt& )
```

Back in ALERT again, everything is set up, so the DisplayAlert routine is called, given the address of the alert message string data in mAddr&, and the overall height of the alert from



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aHgt&. Assuming everything is set up properly, DisplayAlert then returns the user response in resp%. That's all there is to calling an alert. Now ALERT just has some cleaning up to do.

```
CALL FreeMem&( mAdd&, mSiz& )
```

ALERT calls the system routine FreeMem, giving it the address and size of the memory block allocated to hold the alert message data. ALERT's done with it, so it gives it back to the system.

```
END SUB
```

That's the end of ALERT. Control is passed back to the main program, with the user's response in resp%.

```
PRINT "The user pressed the ";
IF r% = 1 THEN
  PRINT "LEFT mouse button."
ELSE
  PRINT "RIGHT mouse button."
END IF
```

The main program is almost done. The user's response is checked, and depending on whether the user pressed the left or right mouse button, the appropriate message is displayed.

```
LIBRARY CLOSE
END
```

The main program then closes the libraries it opened, and finishes execution. By the way, those data statements between LIBRARY CLOSE and END just hold the text for each line of the alert.

That's it. Look through the program, play with the code, and get to understand how it works. Then feel free to use the subprograms in your own code, providing needed adjustments. Alerts can be very useful to get messages across that you want to make sure the user notices. Try to resist the urge to use alerts for non-critical messages however, because they do disrupt normal system functions, and like anything else, using them too much will make the user start treating them like regular messages and pretty much ignoring them.

The last section of this article briefly explains the operation of the second program, which takes parts of this and the previous article, and uses them to create a fake system crash.

The System Request Program

Right off the bat, let me explain the name. When you load and run a BASIC program, the output window is titled the same as the program's file name. To save a little code, but keep the requester looking authentic, this program must be saved as "System Request", so the output window has that title when the program is run. This is a harmless little program, but you must understand that it only simulates a system crash, and it is not a real crash (unless of course you made an error when typing it in, which might cause a REAL crash). When you press the mouse button during the alert, it returns you to BASIC like nothing had ever happened. Type it in, save it as "System Request" and run it. Below I'll quickly explain how the program works, but except for the main BASIC program, I am only going to note changes in the subprograms from this and the last article, since they work the same as described before.

```
CLS
DIM xp%(3), m$(3)
```

Use the same start as the alert program, but note that since we will be using only three lines, xp%() and m$() must only be dimensioned for three elements. Later we will use UBOUND to figure out how many lines of text there are in the alert. The next few lines will declare the system functions, and open the necessary libraries. Since we will be using requesters and an alert, we need AutoRequest, as well as, DisplayAlert.

```
m$(1) = "Software Failure."+SPACE$(8)
m$(1) = m$(1) + "Press left mouse button to continue."
m$(2) = " "
m$(3) = "Guru Meditation #00000006.0001F688"
FOR i% = 1 TO 3
  j% = LEN( m$(i%) )
  wx% = INT((640-(j%*8))/2)
  xp%(i%) = wx%
NEXT i%
r% = 0
```

Here we use a slightly different method to set up m$() with the alert message, and calculate the values for xp%(). The end result is still the same, with m$() holding the alert text, and xp%() holding the x-offsets for each line. After this, the next lines set up the message for the requester box using the same method we used in the last article.

(continued on page 98)

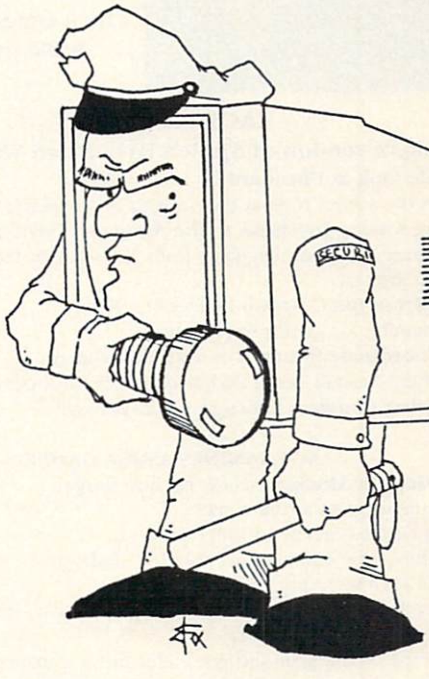
Your Amiga On Guard

Intruder Alert

review by Mike Morrison

The Intruder Alert (IA) is a hardware/software package that turns your Amiga into a security guard. The IA connects to the Amiga through the joystick port #2. It has eight RCA jacks in the back that you connect to the real world. The ports can be connected to any on/off or open/close type switch capable of handling TTL (0-5 Volts) at 100 milliampere. You can even connect a X-10 Powerhouse Computer Interface and turn electrical appliances (lamp, TV, radio, tape recorder, etc.) on and off.

The software included with IA is easy to use and bug-free. There are three different screens: control, setting, and reading.

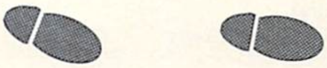


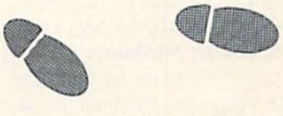
The control panel is the first screen you see when the program is run. From here, you have a multitude of options regarding how IA will monitor its ports: whether a breach occurs when a port is opened or closed, whether you want sound and voice alarms on or off, whether you want program "hooks" and breach recordings on or off, how many times a "hook" or breach should be recorded, and whether breaches should be written to a disk file. You can push the monitor screen to the background, save current settings, and select a setup file.

The setting panel lets you choose what alarm will sound when a breach occurs for each port. You can select one of four digitized sounds (three different alarm sounds and a dog barking) to play when a breach occurs. You can also select up to four lines of text (up to 37 characters each) to be spoken when a breach occurs. Although a minor complaint, I think the user should be able to use other digitized sounds in place of the four included.

You can also have the computer dial a number through a modem when a port is breached. When the phone is answered, IA plays tones or pulses to signal that a breach has occurred. Or you can call the computer, and the computer will answer (or not answer if you so choose) when there is a breach. There are also settings for how long IA will wait before monitoring, how long before a breach is signalled, how long the alarm will sound, how long before the port is reset, and how long before IA will stop monitoring. These can be set for each port separately.

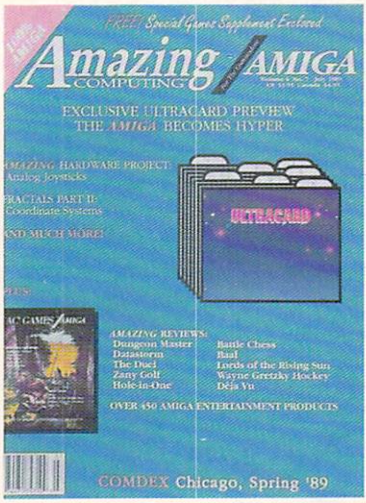
The reading panel shows statistics concerning each port: on or off, total number of breaches, and the total time the port was breached. There is also a timer displaying the total length of time that IA has been monitoring.





At first glance, you might think that eight ports is not enough, but with some creativity eight ports can stretch a long way. You can have all your windows attached to just one port by wiring them sequentially. This would sound an alarm if any one of the windows where opened. (You would not be able to tell which window it was, but the important thing is that you know one of them is open.)The same idea could be used for all the doors on one floor. You can also use port #8 to send signals to a X-10 interface.

The "program hook" is a very useful and versatile feature. The hook allows you to execute a batch file each time a breach occurs. Create the batch file using your favorite editor to either modify one of the three examples supplied or to create your own. There are three examples and another that is left blank for



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The Intruder Alert attached to an A2000.

your use. The first example batch shows an IFF picture when a breach occurs. You could have a different IFF picture displayed for each port. The second batch is for your use. The third batch records the time and date a breach occurs for each port and writes it to a separate file. The fourth batch turns X-10 modules either on or off by sending signals through a small communication program that is supplied.

Once IA is set up, it can be pushed to the back to operate out of the way. You can return it to the front using a hot key sequence. I found the program to be well behaved while running in the background in a multitasking environment. If the IA boot disk is left in df0: and the power goes off, the program will restart when power is returned with the same settings you had prior to the power outage.

Intruder Alert is a well rounded package that does just about everything you could want from a monitoring system. The manual is well written and provides examples for clarification. It has appendices on installing IA to a hard disk, trouble shooting, and some technical notes on using an opto-isolator with AI. The hardware is easy to install (plug it into joystick port #2), and hooking up the wiring and switches should be easy enough for anyone who can use a screwdriver. Finally, the software is complete and easy to use.

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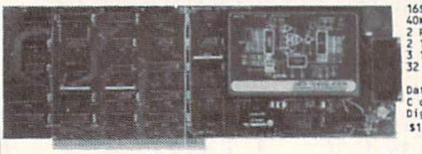

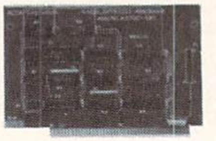

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ACDA

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(continued from page 94)

```
Crash:
DoReq Hand&, Txt1$, Txt2$, Txt3$, LBttn$, RBttn$, resp%
IF resp% GOTO Crash
```

In a system crash, when the requester box that says "Software error - task held." comes up, even though you seem to have two choices, pressing "Retry" just brings up the requester again. Here we use a loop to do the same thing.

```
SUB DoReq (win&, Tx1$, Tx2$, Tx3$, lbut$, rbut$, r%) STATIC
r% = 0
wd& = 320&
ht& = 70&
Tx1$ = LEFT$(Tx1$,35)
Tx2$ = LEFT$(Tx2$,35)
Tx3$ = LEFT$(Tx3$,35)
lbut$ = LEFT$(lbut$,12)
rbut$ = LEFT$(rbut$,12)
```

Because the message in the system crash requester is slightly longer than the messages DoReq was designed to handle, the wd& value had to be changed to make the requester wider, and the lines which check to make sure Tx1$-Tx3$ are not too long had to be adjusted to allow lines with thirty-five characters, instead of thirty. The rest of DoReq functions normally, as do the subprograms called by it, so when all that is complete control returns to the main program. For an explanation of DoReq's functioning, and its related subprograms, consult the previous article.

```
ALERT m$(), xp%(), r%
```

Here we call the ALERT subprogram with our "fake" Guru meditation. ALERT is unmodified, and works just as described in the previous program's explanation.

```
PRINT "Had you fooled there for a minute, eh?"
PRINT "Just another example of creative uses for"
PRINT "system routines from BASIC."
LIBRARY CLOSE
END
```

We finish the program by showing a message upon returning from the alert which tells the user it was all a joke, close the open system libraries and end. There are no data statements, because we did not use that method to assign the alert message to the m$() array instead of assigning it directly to the array itself. There you have it. A pseudo-crash, done completely from BASIC, as a demonstration of using requesters and alerts from within BASIC programs.

The designers of AmigaBASIC may not have given programmers every ability that programmers in a "serious" language like C have, but with a little ingenuity, and a couple of system manuals nearby, we can come close enough. Furthermore, AmigaBASIC comes free with the computer, and if you really need compiled speed, you can always pick up a BASIC compiler to boost up the performance of your programs a little. On the (gasp!) IBM, BASIC is reentering the arena as an application-development language, and gaining respect as a "serious" language in its own right. If BASIC on the IBM can be "serious", then it's up to us to show the C and Modula-2 snobs that our BASIC can be "serious" as well.

Listing One
Sample Alert Program

```
CLS
DIM xp%(4), m$(4)

DECLARE FUNCTION AllocMem&() LIBRARY
DECLARE FUNCTION DisplayAlert%() LIBRARY

LIBRARY "exec.library"
LIBRARY "intuition.library"

PRINT "This is an example of using the DisplayAlert system"
PRINT "routine to make an alert, and get the user's press"
PRINT "of either a left or right mouse button."
PRINT

FOR i% = 1 TO 4
  READ m$(i%)
  wx% = INT((640-(LEN(m$(i%))*8))/2)
  xp%(i%) = wx%
NEXT i%
r% = 0

ALERT m$(), xp%(), r%

PRINT "The user pressed the ";
IF r% = 1 THEN
  PRINT "LEFT mouse button."
ELSE
  PRINT "RIGHT mouse button."
END IF

LIBRARY CLOSE
```

```
DATA "Guru Meditation Joke!"
DATA "Why are Amiga programmers so enlightened?"
DATA "— Because they keep visiting with the Guru!"
DATA "(Press EITHER mouse button to continue)"

END


SUB ALERT ( mess$(), xpos%(), resp% ) STATIC

nlines% = UBOUND( mess$ )
aHgt& = 8 + (10 * nlines%)
m$ = ""

FOR y% = 1 TO nlines%

  wk$ = mess$(y%)
  wkx% = xpos%(y%)
  wky% = 10 * y%
  CALL FormatAlert( wkx%, wky%, wk$ )

  IF y% < nlines% THEN
    wk$ = wk$ + CHR$(1)
  ELSE
    wk$ = wk$ + CHR$(0)
  END IF

  m$ = m$ + wk$

NEXT y%

CALL MkAlert( m$, mAdd&, mSiz& )

resp% = DisplayAlert%( 0&, mAdd&, aHgt& )

CALL FreeMem&( mAdd&, mSiz& )

END SUB


SUB FormatAlert( x%, y%, msg$ ) STATIC

IF (x%<0 OR x%>320) OR (y%<0 OR y%>200) THEN
  PRINT" Format location error. Check X/Y coord."
  STOP
END IF

xm% = INT(x%/256)
xl% = x% MOD 256
xy$ = CHR$(xm%)+CHR$(xl%)+CHR$(y%)

IF LEN(msg$)>80 THEN
  PRINT" Format line length too long. Check msg$."
  STOP
END IF

a$ = xy$ + msg$ + CHR$(0)

msg$ = a$

END SUB


SUB MkAlert( msg$, Addr&, Size& ) STATIC

Size& = LEN( msg$ )
memtype& = 65537&

mAddr& = 0&
mAddr& = AllocMem&( Size&, memtype& )
IF mAddr& = 0& THEN
  PRINT" Memory allocation error."
  STOP
END IF

CALL CopyMem&( SADD(msg$), mAddr&, Size& )

Addr& = mAddr&

END SUB
```

Listing Two
System Request Program

```
CLS
DIM xp%(3), m$(3)

DECLARE FUNCTION AllocMem&() LIBRARY
DECLARE FUNCTION DisplayAlert%() LIBRARY
DECLARE FUNCTION AutoRequest%() LIBRARY

LIBRARY "exec.library"
LIBRARY "intuition.library"

m$(1) = "Software Failure."+SPACE$(8)
m$(1) = m$(1) + "Press left mouse button to continue."
m$(2) = " "
m$(3) = "Guru Meditation #00000006.0001F688"

FOR i% = 1 TO 3
  j% = LEN( m$(i%) )
  wx% = INT((640-(j%*8))/2)
  xp%(i%) = wx%
NEXT i%
r% = 0

Txt1$ = " Software error - task held          "
Txt2$ = "  Finish ALL disk activity           "
Txt3$ = " Select CANCEL to reset/debug        "
LBttn$ = "Retry"
RBttn$ = "Cancel"
Hand& = WINDOW(7)
resp% = 0

Crash:

DoReq Hand&, Txt1$, Txt2$, Txt3$, LBttn$, RBttn$, resp%

IF resp% GOTO Crash

ALERT m$(), xp%(), r%

PRINT "Had you fooled there for a minute, eh?"
PRINT "Just another example of creative uses for"
PRINT "system routines from Basic."

LIBRARY CLOSE

END


SUB DoReq (win&, Tx1$, Tx2$, Tx3$, lbut$, rbut$, r%) STATIC

  r% = 0
  wd& = 320&
  ht& = 70&
  Tx1$ = LEFT$(Tx1$,35)
  Tx2$ = LEFT$(Tx2$,35)
  Tx3$ = LEFT$(Tx3$,35)
  lbut$ = LEFT$(lbut$,12)
  rbut$ = LEFT$(rbut$,12)

  CALL CreateIText( 0, 1, 0, 7, 3, Tx1$, t1& )
  CALL CreateIText( 0, 1, 0, 7, 13, Tx2$, t2& )
  CALL CreateIText( 0, 1, 0, 7, 23, Tx3$, t3& )
  CALL LinkIText( t1&, t2& )
  CALL LinkIText( t2&, t3& )

  CALL CreateIText( 0, 1, 0, 5, 3, lbut$, lt& )
  CALL CreateIText( 3, 1, 0, 5, 3, rbut$, rt& )

  r% = AutoRequest%( win&, t1&, lt&, rt&, 0&, 0&, wd&, ht& )

  CALL FreeIText( t1& )
  CALL FreeIText( t2& )
  CALL FreeIText( t3& )
  CALL FreeIText( lt& )
  CALL FreeIText( rt& )

END SUB
```

(continued)

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```
SUB CreateIText( Pa%, Pb%, Md%, LE%, TE%, Txt$, Adr& ) STATIC

  Txt$ = Txt$ + CHR$(0)
  Size& = LEN(Txt$)
  memtype& = 2^0 + 2^16

  iAddr& = 0&
  tAddr& = 0&
  iAddr& = AllocMem&( 24&, memtype& )
  tAddr& = AllocMem&( Size&, memtype& )

  IF (iAddr& = 0 OR tAddr& = 0) THEN
    PRINT "Memory allocation problem!!!"
    STOP
  END IF

  CALL CopyMem&( SADD(Txt$), tAddr&, Size& )


  POKE  iAddr&,    Pa%
  POKE  iAddr&+1,  Pb%
  POKE  iAddr&+2,  Md%
  POKEW iAddr&+4,  LE%
  POKEW iAddr&+6,  TE%
  POKEL iAddr&+8,  0&
  POKEL iAddr&+12, tAddr&
  POKEL iAddr&+16, 0&

  Adr& = iAddr&

END SUB

SUB FreeIText( iAddr& ) STATIC

  tAddr& = PEEKL( iAddr&+12 )

  Size& = 0&
  WHILE ( PEEK( tAddr& + Size& ) > 0 )

    Size& = Size& + 1

  WEND

  Size& = Size& + 1&

  CALL FreeMem&( iAddr&, 24& )
  CALL FreeMem&( tAddr&, Size& )

END SUB

SUB LinkIText( IText1&, IText2& ) STATIC

  POKEL IText1& + 16, IText2&

END SUB


SUB ALERT ( mess$(), xpos%(), resp% ) STATIC

nlines% = UBOUND( mess$ )
aHgt& = 8 + (10 * nlines%)
m$ = ""

FOR y% = 1 TO nlines%

  wk$ = mess$(y%)
  wkx% = xpos%(y%)
  wky% = 10 * y%
  CALL FormatAlert( wkx%, wky%, wk$ )

  IF y% < nlines% THEN
    wk$ = wk$ + CHR$(1)
  ELSE
    wk$ = wk$ + CHR$(0)
  END IF

  m$ = m$ + wk$

NEXT y%

CALL MkAlert( m$, mAdd&, mSiz& )

resp% = DisplayAlert%( 0&, mAdd&, aHgt& )

CALL FreeMem&( mAdd&, mSiz& )

END SUB


SUB FormatAlert( x%, y%, msg$ ) STATIC

IF (x%<0 OR x%>320) OR (y%<0 OR y%>200) THEN
  PRINT" Format location error. Check X/Y coord."
  STOP
END IF

xm% = INT(x%/256)
xl% = x% MOD 256
xy$ = CHR$(xm%)+CHR$(xl%)+CHR$(y%)

IF LEN(msg$)>80 THEN
  PRINT" Format line length too long. Check msg$."
  STOP
END IF

a$ = xy$ + msg$ + CHR$(0)

msg$ = a$

END SUB


SUB MkAlert( msg$, Addr&, Size& ) STATIC

Size& = LEN( msg$ )
memtype& = 65537&

mAddr& = 0&
mAddr& = AllocMem&( Size&, memtype& )
IF mAddr& = 0& THEN
  PRINT" Memory allocation error."
  STOP
END IF

CALL CopyMem&( SADD(msg$), mAddr&, Size& )

Addr& = mAddr&

END SUB
```

•AC•

Building a Better String Gadget

...setting up the data entry window is not that complicated.

by John Bushakra

The Amiga's user interface presents the programmer with incalculable possibilities and methods of capturing data. But consider for a moment those programs which do not benefit much from colorful gadgets, proportional knobs, sliders and all the other frivolities of mouse-driven input.

I'm talking, of course, about those programs in which the user is required to enter data primarily from the keyboard. These programs are usually responsible for such mundane tasks as maintaining databases, possibly for accounts receivable customers, employees, vendors, or for tracking daily sales. The information required by these programs is not graphical, but textual, and can only be acquired by some hapless individual spending hours at the keyboard entering data.

The typical user of a keyboard-oriented task is not likely to be impressed by a fancy gadget rendered in 4096 different colors. Rather, they are going to be more concerned with the speed with which they can process their work. Unfortunately, these same users must be wined and dined by Amiga software developers if the machine is ever going to be taken seriously in the ever-growing (and lucrative) business world.

The competition

Developers who create keyboard-oriented applications on IBM PC's have it made. These guys have got data entry screens down to a science because they've had to get by for so long without the benefit of a mouse-driven operating system.

Naturally, they developed programs and routines that would maximize the efficiency of the keyboard. PC programmers can draw from such powerful programming utilities as Vitamin C (Creative Programming) to create data input fields, exploding windows, pull down menus and submenus, help screens, and more—all in color and all easily controlled from the keyboard. And before you scoff and say that a lowly PC clone could never rival an Amiga in terms of user interface, let me tell you as a developer of both Amiga and PC applications that such programming utilities are part of what has helped give PC's such credibility and formidability in the computer world.

Keyboard input on the Amiga

As an aspiring Amiga software developer, you are faced with the following situation: You must write a program that keeps track of, among other things, accounts receivable customers. You need the following information from the user: a customer number; the date the account was created; his last name; first name; address; city, state and zip; and phone number.

From a programming standpoint, setting up the data entry window is not that complicated. We need a window and seven string gadgets. But think about what the end user will have to do to enter this information. Assuming you are kind enough to activate the first string gadget for him, the user will have to type in the customer number, take his hand from the keyboard, put it on the mouse, move the mouse to the entry date field, click the button, remove his hand from the mouse, place his hand back on the keyboard (hopefully landing on the right keys), and type in the date. The user will have to repeat this for each of the remaining input fields on the screen.

Trivial, you say? True, if you have only two or three string gadgets on the screen, the user will probably not utter too many curses at you. Make the user move his hand between keyboard and mouse too many times, though, and your program disk will very quickly be converted into a blank, formatted floppy. Kidding aside, entering data would be much faster if users were not required to remove their hands from the keyboard.

If you're skeptical, set up a window with at least the input fields mentioned above, and try it yourself. Consider also that this is an extremely simplified example. A real-life accounts receivable program would have to keep track of finance charges on each account (month and year-to-date), past due balances (31 to 60, 61 to 90, and over 90 days), possibly month and year-to-date charges and payments, and several hundred (yes, HUNDRED) individual line items for a plethora of accounts, very likely reaching into the hundreds as well.

At a minimum, you need a way to enable users to move from one input field to another quickly, without moving their hands from the keyboard.

Luckily, Intuition does provide a fairly easy way to extend its data structures so that they include any variables pertinent to the application at hand. In our case, the door to expansion will be the UserData field of the gadget structure. We can define a new data structure that will enable us to bounce from input field to input field using the keyboard and tack a pointer to the new structure onto the end of each string gadget.

We will need to store at least four pieces of information in the new data structure. Specifically, these are four pointer fields which will tell us which gadgets to move to when the user hits the up, down, left, or right arrow keys. If any of these fields contains a NULL value, the gadget currently highlighted will remain highlighted when the corresponding arrow key is hit.

We will need to draw a border around the currently active gadget so users will know which input field they are sitting on. Because we will be highlighting each string gadget "on-the-fly," there will be no need to store a Border in the string gadget itself. This brings up the next items we will need in our data structure—the foreground and background colors, and a pointer to the gadget's window—to get to the correct RastPort.

The remaining field in the structure will tell us when the

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gadget is selected. This field is necessary because we still want the user to be able to select the gadget with the mouse, and some special processing is needed in this case. Refer to Listing One to see the complete data structure, which I've called STRNODE.

The system will work in the following way. The user will be able to highlight a string gadget using the arrow keys to move to the desired input field. When the user is at the field where he wants to enter data, he will activate the string gadget by striking the RETURN key. When the user finishes entering data into the string gadget, they will press RETURN again. At this point, the user may use the arrow keys to move to the next gadget or they may still select string gadgets with the mouse. In this case, the highlight box around the current gadget is erased, and the gadget hit by the mouse is highlighted and immediately activated (a cursor appears and the user may enter data).

Highlighting and activating the gadget must be triggered by two seperate events because once the string gadget is activated, it is impossible to monitor keyboard activity without going through some rather ugly contortions. If we activated a gadget as soon as it became highlighted, we would be assuming that, because the user highlighted the gadget, he wants to enter data there as well. This might not always be the case; the currently highlighted gadget might simply lie along the path to the user's true destination. Activating each gadget as it is highlighted would cause nearly as much trouble as having to select it with the mouse!

Only a few simple functions are needed to implement this system. Please refer to Listing Two, for these routines.

It might be helpful for you to lay out your input screen on paper before calling any of the setup routines. After putting things on paper, you will have a clearer perspective on which gadgets should be highlighted when the appropriate arrow key is pressed.

When your screen is ready, you can call the function SetSTRNODE to set up the string gadget pointers. To this function you will pass the address of the string gadget you are initializing, four more pointers to gadgets, the foreground and background colors, and the address of the window containing your string gadgets. You will have to call SetSTRNODE from the keyboard for each string gadget you wish to highlight.

To present a consistent environment to the user, it is a good idea to call SetSTRNODE for all the string gadgets in your display. Otherwise, when users select a gadget for which you have not called SetSTRNODE, they will be unable to use the keyboard to move to a different gadget.

Keyboard events

Let's turn our attention now to the keyboard and how we will monitor key press events from Intuition. You can elect to have Intuition send you two types of keyboard events, called RAWKEY and VANILLAKEY.

RAWKEY events are sent to your program once when a key is pressed, and again when the key is released. If you have ever spoken directly to the console device, you know that some keys on the Amiga keyboard send whole strings of characters to your program. In particular, the function keys, the arrows, the help key and all the various combinations of these keys with the SHIFT, ALT and CTRL keys, can result in strings of up to four characters.

Intuition deals with this by placing the RAWKEY code in the Code field of your IntuiMessage structure, and storing any modifiers, such as ALT, SHIFT or CTRL, in the Qualifier field. These values are so-called "raw key codes", not ASCII values. You will have to do some translating on these codes before using them to send characters to the screen in your program.

If you select VANILLAKEY events, Intuition will filter keyboard input, and only send you key codes for those keys that do not generate multiple character sequences. This means that, if you are watching for VANILLAKEYs and the user hits F1, your program will not know about it because the F1 key generates more than one character.

Other keys you will not hear about are the arrow keys and the help key. Furthermore, the value contained in the Code field of your IntuiMessage is an ASCII value. So, if the user hits the "a" key, you are sent a 97 in the Code field, which is the ASCII value of that character. You can see that, unless you define other keys besides the arrows to move the highlight box around the window, VANILLAKEY events will not work properly for this system.

Take another look at the #define statements in Listing One, strnode.h. Notice that all but one of the raw key codes defined there are sent when the respective key is pressed by the user. The exception is the RETURN key, which is #define'd as the "return key released" code.

An interesting thing happens when you monitor gadget events and RAWKEY events in a window. When the user is typing text into a string gadget, your program has no control whatsoever. When users are finished typing, they may either select a new gagdet with the mouse, or strike the RETURN key to deactivate the string gadget.

If the user strikes the RETURN key, Intuition will eat the key-pressed event and deactivate the gadget. Once the key is pressed, though, it has to be released. Since Intuition has trapped the key press, your program will receive a RAWKEY event with the "return key released" code in the IntuiMessage Code field.

We are very interested in this special RAWKEY event because it can be used to flag the gadget as "selected" or "not selected". This way, our two methods of selecting a string gadget—the RETURN key and the mouse—will function properly together.

Since we are going to receive another RAWKEY event when the user deactivates the gadget with the return key, we have to check the gadget to see if the user has finished typing text, or if he is trying to activate the gadget with the RETURN key. When the function ProcessSTRNODE sees the RETURN key, it checks the gadget passed to it to find out if it is currently selected. If it is, we know the user has finished typing text and has deactivated the gadget by pressing RETURN. In this case, all we need to do is toggle the "selected" field of our structure back to false, and return.

If the field is false, we know the user wants to activate the current gadget. We call the Intuition function ActivateGadget to do this, and set the "selected" field to true. Notice that it is a good idea to check the return value of ActivateGadget, since there are some circumstances when it will fail. If we set the "selected" field to true even when ActivateGadget fails, the system will not work properly.

Mouse power

Activating a string gadget using the mouse is just as simple. There is one trick though, and that is to remember that once a string gadget is activated, your program is not in control until the user deactivates it. In order to do any kind of processing before the gadget is activated by Intuition, the gadget must have the GADGIMMEDIATE activation flag set, rather than the RELVERIFY flag.

When you set IDCMP flags in your window, you will have to set the GADGETDOWN flag. This way, you will be notified immediately with a GADGETDOWN message when the user clicks on a string gadget, and you can do any type of preprocessing you need. As soon as you are done, Intuition takes over and the cursor appears in the string gadget.

In our case, the preprocessing is straightforward. Whenever a GADGETDOWN is detected on a string gadget, ProcessSTRNODE will set the "selected" field to true and immediately call DoBorder to highlight the gadget. Since ProcessSTRNODE has no way of knowing which gadget was highlighted prior to the GADGETDOWN event, the calling program must be responsible for erasing this gadget's border.

The rest of ProcessSTRNODE is a piece of cake. Whenever the main program detects a RAWKEY event, it will call ProcessSTRNODE with the currently highlighted gadget (or the gadget hit by the mouse) and the raw key code. If the key code is one of those defined, the switch statement will take the appropriate action. Otherwise, it just returns the same gadget that was passed to it.

For example, if ProcessSTRNODE is passed the LEFTKEY code, then the gadget's "leftkey" field will be examined. If it is not NULL, the gadget address stored there becomes the current gadget. The border around the old gadget is then erased (by passing !DRAW to DoBorder — "not DRAW"), and a new border is drawn around the current gadget. ProcessSTRNODE will then pass the gadget at the "leftkey" field back to the main program, and the main program will make it the new currently highlighted gadget.

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If the "leftkey" field happened to be NULL, no action would be taken when the user hit the left arrow while this gadget is highlighted (perhaps the gadget is the leftmost input field on the screen).

The DoBorder function uses the foreground and background numbers to draw and erase the border. Notice that the size of the field is determined from the gadget's Width and Height fields. The RastPort in which to draw is readily available from the window address field in our STRNODE structure.

To see how to use this system, refer to Listing Four, demo.c. The program opens a new screen and window and attaches the seven string gadgets mentioned in the example above. The user may move between any of the seven input fields using the arrow keys and activate the current field by pressing the RETURN key, or any field with the mouse. The screen and window definitions are contained in Listing Three, demo.h. Incidentally, these structures were generated with PowerWindows 2.0 from Inovatronics Inc.

One other programming aid was used in contructing the demo. Also published by Inovatronics, it is called, strangely enough, Inovatools I. The package consists of a library of extremely useful routines which may be linked into your executable C file. I have used but one function from this package—a very handy little routine called GetIntuiMessage. It simply monitors a window's message port and sends back

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anything interesting that comes through. GetIntuiMessage performs no other wizardry; you can accomplish the same thing with the old standby "while-loop."

Wish list

The functions presented here bring the Amiga's keyboard input up one more notch on the evolutionary scale. But by no means do they bring it into the class of what is possible, even on garden variety PC's. If any of you Intuition Higher-Ups are reading this, please consider enhancing keyboard input on the Amiga.

At a minimum, we should be able to pass an input "picture" into a string gadget to provide a validation a bit more detailed than "is it a string?" or "is it an integer?". For example, if we expect a date to be entered, we could send the picture "99/99/99". The 9's would tell Intuition that the user is only allowed to enter numbers, and the slashes would become part of the input string, so the user would not have to type them in. A phone number picture would appear as "(999) 999-9999" and a social security picture would appear as "999-99-9999".

"Hooks" would also be nice. Hooks are places where you can insert your own functions which are executed at certain preordained times during data input. If Intuition had hooks, programs would not completely lose control while the user was entering data into a string gadget. Hooks are implemented as pointers to functions in C. Each string gadget could have a preinput function, and a postinput function. These pointer locations could easily be placed in the StringInfo structure. In your program, you would store the addresses of your pre- and post- input functions, and Intuition would call them before and after the data input, respectively.

Listing One
strnode.h

```
/* Listing One:
>> Header file for string gadget selection routines, strnode.c
>> Created 03/14/89 by John Bushakra
>> Compiled using Lattice C 4.0
*/

/* ———————— RAWKEY code #define's ———————— */
#define UPKEY    76  /* Up arrow key pressed.  (A1000)       */
#define DOWNKEY  77  /* down arrow pressed.                  */
#define LEFTKEY  79  /* left arrow pressed.                  */
#define RIGHTKEY 78  /* right arrow pressed.                 */
#define RETKEY   196 /* Return key *released*                */
#define HELPKEY  99  /* help key press.                      */
#define DRAW     1   /* to draw or erase the activation border */

/* The STRNODE structure will be attached to string gadgets via */
/* the gadgets UserData field.                                  */

typedef struct {
  struct Gadget *upgad,    /* Gadget to hilite on up arrow      */
                *downgad,  /* Gadget to hilite on down arrow    */
                *leftgad,  /* Gadget to hilite on left arrow.   */
                *rightgad; /* Gadget to hilite on right arrow.  */
         SHORT  foregroundcolor, /* color to draw the border    */
                backgroundcolor, /* color to erase the border   */
                selected;  /* TRUE when user selects the gadget */
  struct Window *window;   /* pointer to this gadget's window   */
        } STRNODE;
```

Listing Two
strnode.c

```
/* Listing Two.
> Created 03/14/89 by John Bushakra
> Routines for activating string gadgets by using the keyboard.
> Compiled with Lattice C 4.0
>
> 1>lc strnode    <ENTER>
*/

#include <exec/types.h>
#include <exec/memory.h>
#include <intuition/intuition.h>
#include <strnode.h>      /* include the header file... */

/* ——————————————————————————— */
/* newnode = AllocSTRNODE()
>  Synopsis  : Allocates space for a new STRNODE structure.
>  Inputs    : None.
>  Returns   : Address of new STRNODE, NULL on failure.
*/

STRNODE *AllocSTRNODE()
{

    STRNODE *newnode = NULL;

    if( (newnode = (STRNODE *)AllocMem(sizeof(STRNODE),MEMF_CLEAR)) )
        return(newnode);
    else
      return(NULL);
}
/* ——————————————————————————— */

/* SetSTRNODE()
>  Synopsis : Calls AllocSTRNODE.
>             Attaches the gadgets passed here into the STRNODE
structure.
>             Also sets the foreground & background colors, and
>             stores a pointer to the gadget's window.
>  Inputs   : struct Gadget *gad.....Gadget to attach the STRNODE to.
>                           *up......Up arrow gadget
>                           *down....Down arrow gadget
>                           *right...Right arrow gadget
>                           *left....Left arrow gadget
>                    SHORT  foregroundcolor..Color to draw the border
>                           backgroundcolor..Color to erase the border
>             struct Window *window..This gadget's window
> Returns   : Nothing.
*/
void SetSTRNODE(gad,up,down,right,left,foregroundcolor,
                backgroundcolor,window)
struct Gadget *gad, *up, *down, *right, *left;
SHORT foregroundcolor,backgroundcolor;
struct Window *window;
{
       STRNODE *newnode = NULL;
```

(continued)

```
       if( (newnode = AllocSTRNODE()) )
          {
             newnode -> upgad        = up;
             newnode -> downgad      = down;
             newnode -> rightgad     = right;
             newnode -> leftgad      = left;
             newnode -> foregroundcolor  = foregroundcolor;
             newnode -> backgroundcolor  = backgroundcolor;
             newnode -> selected     = FALSE;
             newnode -> window       = window;
                 gad -> UserData     = (APTR)newnode;
          }
}
/* ——————————————————————————————— */
/* FreeSTRNODE()
>  Synopsis  :  Deallocates space for the STRNODE struct.
>  Inputs    :  Gadget *gad....Gadget that needs to have its
>                              STRNODE freed.
>  Returns   :  Nothing.
*/
void FreeSTRNODE(gad)
struct Gadget *gad;
{
     FreeMem(gad -> UserData,sizeof(STRNODE));
     gad -> UserData = NULL;
}
/* ——————————————————————————————— */

/* ProcessSTRNODE()
>  Synopsis  :  Activates Gadget on RETKEY signal, moves border to
>               correct gadget on arrow key pressed.
>  Inputs    :  struct Gadget *gad...currently hilited gadget.
>                      USHORT key....RAWKEY code of keypressed.
>  Returns   :  Newly hilited gadget if successful, same gadget
>               passed here on failure.
*/
struct Gadget *ProcessSTRNODE(gad,key)
struct Gadget *gad;
USHORT key;
{
     void DoBorder();
     struct  Gadget *curgad = NULL;
     STRNODE *thisnode = (STRNODE *)gad -> UserData;

     /* if the gadget had no UserData, or if it's not a string
gadget...*/
     if( (thisnode == NULL) || (gad -> GadgetType & STRGADGET != TRUE) )
        return(gad);       /* return the gadget, and don't do anything.
*/

     switch(key)
      {
         case UPKEY:
                     if(thisnode -> upgad)
                         curgad = thisnode -> upgad;
                     else
                         return(gad); /* send the same gadget back. */
                     break;
         case DOWNKEY:
                     if(thisnode -> downgad)
                        curgad = thisnode -> downgad;
                     else
                        return(gad);
                     break;
         case LEFTKEY:
                     if(thisnode -> leftgad)
                        curgad = thisnode -> leftgad;
                     else
                        return(gad);
                     break;
          case RIGHTKEY:
                     if(thisnode -> rightgad)
                        curgad = thisnode -> rightgad;
                     else
                        return(gad);
                     break;
           case RETKEY:
                     if(thisnode -> selected == FALSE)
                      {
                        if(ActivateGadget(gad,thisnode -> window,FALSE))
                          thisnode -> selected = TRUE;
                        return(gad);
                      }
                     else
                      {
                        thisnode -> selected = !thisnode -> selected;
                        return(gad);
                      }
           case GADGETDOWN:
                     thisnode -> selected = TRUE;
                     DoBorder(gad,DRAW);
                     return(gad);
           default:
                return(gad);
     } /* switch */

     DoBorder(gad,!DRAW);     /* erase border around current gadget  */
     DoBorder(curgad,DRAW);  /* draw border around new gadget        */
      return(curgad);         /* send the newly selected gadget back */

}

/* ——————————————————————————————— */
/* DoBorder()
>  Synopsis  :  Draw or erase a border around the requested gadget.
>  Inputs    :  struct Gadget *gad...The gadget to draw or erase
>                                    around.
>                          int flag...TRUE  = draw the border.
>                                    FALSE = erase the border.
>  Returns   :  Nothing.
*/

void DoBorder(gad,flag)
struct Gadget *gad;
int flag;
{
      STRNODE *thisnode   = (STRNODE *)gad -> UserData;
      struct RastPort *rp = thisnode -> window -> RPort;

      if(flag == DRAW)
        SetAPen(rp,thisnode -> foregroundcolor);
      else
        SetAPen(rp,thisnode -> backgroundcolor);

      Move(rp,gad -> LeftEdge - 1,gad -> TopEdge - 1);
      Draw(rp,gad -> LeftEdge + gad -> Width,gad -> TopEdge - 1);

      Draw(rp,gad -> LeftEdge + gad -> Width,
              gad -> TopEdge  + gad -> Height);

      Draw(rp,gad -> LeftEdge - 1,gad -> TopEdge + gad -> Height);
      Draw(rp,gad -> LeftEdge - 1,gad -> TopEdge - 1);
}
/* ——————— E N D  O F  F I L E ——————— */
```

Listing Three
demo.h

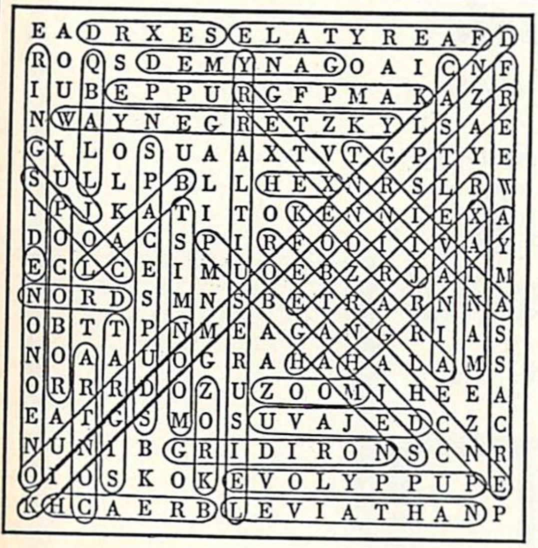
```
/* Listing Three, demo.h
>> Created 03/21/89 by John Bushakra, using PowerWindows 2.0 from
>> Inovatronics.
>> Header file for string gadget demo program.
*/

struct NewScreen ndemoscreen = {
   0,0,
   640,200,
   4,
   0,1,
   HIRES
   CUSTOMSCREEN,
   NULL,
   "Building A Better String Gadget",
   NULL,
   NULL

};


USHORT Palette[] = {
   0x0505,   /* color #0 */
   0x0EFE,   /* color #1 */
   0x0002,   /* color #2 */
   0x0D00,   /* color #3 */
   0x00C0,   /* color #4 */
   0x000C,   /* color #5 */
   0x008D,   /* color #6 */
   0x0FFF,   /* color #7 */
   0x0620,   /* color #8 */
   0x0E50,   /* color #9 */
   0x09F1,   /* color #10 */
   0x0EB0,   /* color #11 */
   0x0555,   /* color #12 */
   0x0777,   /* color #13 */
   0x0B00,   /* color #14 */
   0x0AAA   /* color #15 */
};

UBYTE UNDOBUFFER[31];

UBYTE phonegSIBuff[14];

struct StringInfo phonegSInfo = {
   phonegSIBuff, /* buffer where text will be edited */
   UNDOBUFFER,   /* optional undo buffer */
   0,            /* character position in buffer */
   14,           /* maximum number of characters to allow */
   0,            /* first displayed character buffer position */
   0,0,0,0,0,    /* Intuition initialized and maintained variables */
   0,            /* Rastport of gadget */
   0,            /* initial value for integer gadgets */
   NULL          /* alternate keymap (fill in if you set the flag) */
};
```

(continued)

```
struct IntuiText IText1 = {
   3,0,JAM2,   /* front and back text pens, drawmode and fill byte */
   0,-10,      /* XY origin relative to container TopLeft */
   NULL,       /* font pointer or NULL for default */
   "Phone Number",   /* pointer to text */
   NULL        /* next IntuiText structure */
};

struct Gadget phoneg = {
   NULL,       /* next gadget */
   300,92,     /* origin XY of hit box relative to window TopLeft */
   120,9,      /* hit box width and height */
   NULL,       /* gadget flags */
   GADGIMMEDIATE,   /* activation flags */
   STRGADGET,       /* gadget type flags */
   NULL,    /* gadget border or image to be rendered */
   NULL,    /* alternate imagery for selection */
   &IText1, /* first IntuiText structure */
   NULL,    /* gadget mutual-exclude long word */
   (APTR)&phonegSInfo,   /* SpecialInfo structure */
   7,       /* user-definable data */
   NULL     /* pointer to user-definable data */
};

UBYTE cszgSIBuff[31];
struct StringInfo cszgSInfo = {
   cszgSIBuff,
   UNDOBUFFER,
   0,
   31,
   0,
   0,0,0,0,0,
   0,
   0,
   NULL
};

struct IntuiText IText2 = {
   3,0,JAM2,
   1,-10,
   NULL,
   "City, State, Zip",
   NULL
};

struct Gadget cszg = {
   &phoneg,
   23,92,
   241,9,
   NULL,
   GADGIMMEDIATE,
   STRGADGET,
   NULL,
   NULL,
   &IText2,
   NULL,
   (APTR)&cszgSInfo,
   6,
   NULL
};

UBYTE addrgSIBuff[31];

struct StringInfo addrgSInfo = {
   addrgSIBuff,
   UNDOBUFFER,
   0,
   31,
   0,
   0,0,0,0,0,
   0,
   0,
   NULL
};

struct IntuiText IText3 = {
   3,0,JAM2,
   0,-9,
   NULL,
   "Address",
   NULL
};

struct Gadget addrg = {
   &cszg,
   23,68,
   242,9,
   NULL,
   GADGIMMEDIATE,
   STRGADGET,
   NULL,
   NULL,
   &IText3,
   NULL,
   (APTR)&addrgSInfo,
   5,
   NULL
};
```

```
UBYTE firstngSIBuff[16];

struct StringInfo firstngSInfo = {
   firstngSIBuff,
   UNDOBUFFER,
   0,
   16,
   0,
   0,0,0,0,0,
   0,
   0,
   NULL
};

struct IntuiText IText4 = {
   3,0,JAM2,
   1,-9,
   NULL,
   "First Name",
   NULL
};

struct Gadget firstng = {
   &addrg,
   203,47,
   128,9,
   NULL,
   GADGIMMEDIATE,
   STRGADGET,
   NULL,
   NULL,
   &IText4,
   NULL,
   (APTR)&firstngSInfo,
   4,
   NULL
};

UBYTE lastngSIBuff[16];

struct StringInfo lastngSInfo = {
   lastngSIBuff,
   UNDOBUFFER,
   0,
   16,
   0,
   0,0,0,0,0,
   0,
   0,
   NULL
};

struct IntuiText IText5 = {
   3,0,JAM2,
   1,-9,
   NULL,
   "Last Name",
   NULL
};

struct Gadget lastng = {
   &firstng,
   22,47,
   139,9,
   NULL,
   GADGIMMEDIATE,
   STRGADGET,
   NULL,
   NULL,
   &IText5,
   NULL,
   (APTR)&lastngSInfo,
   3,
   NULL
};

UBYTE entrydategSIBuff[11];

struct StringInfo entrydategSInfo = {
   entrydategSIBuff,
   UNDOBUFFER,
   0,
   11,
   0,
   0,0,0,0,0,
   0,
   0,
   NULL
};

struct IntuiText IText6 = {
   3,0,JAM2,
   0,-9,
   NULL,
   "Entry Date",
   NULL
};
```

(continued)



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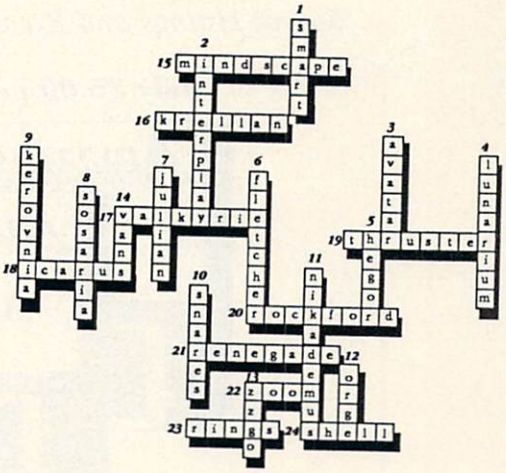
Answers for July, 1989 V.4#7



```
struct Gadget entrydateg = {
   &lastng,
   203,22,
   74,8,
   NULL,
   GADGIMMEDIATE,
   STRGADGET,
   NULL,
   NULL,
   &IText6,
   NULL,
   (APTR)&entrydategSInfo,
   2,
   NULL
};


UBYTE custnogSIBuff[11];

struct StringInfo custnogSInfo = {
   custnogSIBuff,
   UNDOBUFFER,
   0,
   11,
   0,
   0,0,0,0,0,
   0,
   0,
   NULL
};


struct IntuiText IText7 = {
   3,0,JAM2,
   -1,-9,
   NULL,
   "Customer Number",
   NULL
};


struct Gadget custnog = {
   &entrydateg,
   22,22,
   91,8,
   NULL,
   GADGIMMEDIATE,
   STRGADGET,
   NULL,
   NULL,
   &IText7,
   NULL,
   (APTR)&custnogSInfo,
   1,
   NULL
};


struct IntuiText IText8 = {
   3,1,COMPLEMENT,
   0,0,
   NULL,
   "Quit!          ",
   NULL
};
```

```
struct NewWindow ncustw = {
   126,45,    /* window XY origin relative to TopLeft of screen */
   434,122,   /* window width and height */
   0,1,       /* detail and block pens */
   GADGETDOWN+CLOSEWINDOW+RAWKEY,     /* IDCMP flags */
   WINDOWDRAG+WINDOWCLOSE+ACTIVATE,   /* other window flags */
   &custnog,  /* first gadget in gadget list */
   NULL,      /* custom CHECKMARK imagery */
   "Customer Header ",    /* window title */
   NULL,      /* custom screen pointer */
   NULL,      /* custom bitmap */
   5,5,       /* minimum width and height */
   640,200,   /* maximum width and height */
   CUSTOMSCREEN   /* destination screen type */
};
```

Listing Four
demo.c

```
/* Listing Four : demo.c
>> Created by John Bushakra, 03/19/89
>> Demonstration of using STRNODE functions.
>> Compiled using Lattice 4.0.
*/

#include <exec/types.h>
#include <intuition/intuition.h>
#include <proto/intuition.h>
#include <demo.h>                   /* Screen, window, & Gadgets */
#include <strnode.h>                /* STRNODE definition.       */

/* These have to be declared externally... */
struct IntuitionBase *IntuitionBase = NULL;
struct GfxBase       *GfxBase       = NULL;

/* ------------------------------- */
/* main()
>  Open libraries, screen & windows, set string gadget pointers
>  Monitor IDCMP messages.
>  Exit on CLOSEWINDOW message.
*/
void main()
{
     void InitDemo(),MonitorWindow(),EndDemo();
     struct Screen *demoscreen = NULL;
     struct Window *demowindow = NULL;

     InitDemo(&demoscreen,&demowindow);
     MonitorWindow(demowindow);
     EndDemo(demoscreen,demowindow);

}

/* ------------------------------- */
/* InitDemo()
>  Synopsis : Open Intuition & Gfx libraries, screen & windows.
>             Call SetSTRNODE to determine which string gadgets
>             to activate when arrow keys are pressed.
>  Inputs   : struct Screen **scr - Address at which to store
>                                   Screen pointer.
>             struct Window **win - Address at which to store
>                                   Window pointer.
>   Returns : Nothing.
*/
```

(continued)

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AC #3

AC #4

See the complete listing on page 30.

```
void InitDemo(scr,win)
struct Screen **scr;
struct Window **win;
{

   IntuitionBase = (struct IntuitionBase *)
                  OpenLibrary("intuition.library",0);

   GfxBase = (struct GfxBase *)OpenLibrary("graphics.library",0);

   *scr = OpenScreen(&ndemoscreen);
   ncustw.Screen = *scr;
   LoadRGB4(&((*scr) -> ViewPort),Palette,16);

   *win = OpenWindow(&ncustw);

   SetSTRNODE(&custnog,NULL,&lastng,&entrydateg,NULL,1,0,*win);
   SetSTRNODE(&entrydateg,NULL,&firstng,NULL,&custnog,1,0,*win);
   SetSTRNODE(&lastng,&custnog,&addrg,&firstng,NULL,1,0,*win);
   SetSTRNODE(&firstng,&entrydateg,&addrg,NULL,&lastng,1,0,*win);
   SetSTRNODE(&addrg,&lastng,&cszg,NULL,NULL,1,0,*win);
   SetSTRNODE(&cszg,&addrg,NULL,&phoneg,NULL,1,0,*win);
   SetSTRNODE(&phoneg,&addrg,NULL,NULL,&cszg,1,0,*win);

   /* Activate the Customer Number Gadget */
   DoBorder(&custnog,DRAW);
   ActivateGadget(&custnog,*win,FALSE);
}

/* ———————————————————————————————— */
/* MonitorWindow()
>  Synopsis : Watch IDCMP for messages, pass them along to ProcessMsg()
>  Inputs   : struct Window *win - Window to watch.
>  Returns  : Nothing.
*/
void MonitorWindow(win)
struct Window *win;
{
    struct IntuiMessage *demomess = NULL;
    struct IntuiMessage *GetIntuiMessage();

    int    more;

    do {
          demomess = GetIntuiMessage(win);
          ReplyMsg(demomess);
          more = ProcessMsg(demomess);

    } while(more == TRUE);

}

/* ———————————————————————————————— */
/* ProcessMsg()
>  Synopsis : Decide what to do about the current IntuiMessage.
>  Inputs   : struct IntuiMessage *mess - The message we received
>                                  at the window's IDCMP.
>  Returns  : TRUE if message was NOT CLOSEWINDOW.
>             FALSE if message was CLOSEWINDOW.
*/
ProcessMsg(mess)
struct IntuiMessage *mess;
{
      ULONG  class = mess -> Class;
      USHORT code  = mess -> Code;
      struct Gadget *tempgad = NULL;
      static struct Gadget *curgad  = &custnog;
      struct Gadget *ProcessSTRNODE();

      switch(class)
       {
          case GADGETDOWN:
                     tempgad = (struct Gadget *)mess -> IAddress;
                     if( (tempgad -> UserData) && (tempgad -> GadgetType
& STRGADGET) )
                       {
                         DoBorder(curgad,!DRAW);
                         curgad =
ProcessSTRNODE(tempgad,(USHORT)GADGETDOWN);
                       }
                     return(TRUE);
          case RAWKEY:
                     curgad = ProcessSTRNODE(curgad,code);
                     return(TRUE);
          case CLOSEWINDOW:
                     return(FALSE);
          default:
                     return(TRUE);
       } /* switch */

}

/* ———————————————————————————————— */
/* EndDemo()
>  Synopsis : Close window, screen & libraries, free up STRNODES.
>  Inputs   : struct Screen *scr - Address of our screen.
>             struct Window *win - Address of the window.
>  Returns  : Nothing.
*/
void EndDemo(scr,win)
struct Screen *scr;
struct Window *win;
{

      CloseWindow(win);
      CloseScreen(scr);

      CloseLibrary(IntuitionBase);
      CloseLibrary(GfxBase);

      FreeSTRNODE(&custnog);
      FreeSTRNODE(&entrydateg);
      FreeSTRNODE(&lastng);
      FreeSTRNODE(&firstng);
      FreeSTRNODE(&addrg);
      FreeSTRNODE(&cszg);
      FreeSTRNODE(&phoneg);
}
```

•AC•

The AMICUS & Fred Fish Public Domain Software Library

This software is collected from user groups and electronic bulletin boards around the nation. Each Amicus disk is nearly full, and is fully accessible from the Workbench. If source code is provided for any program, then the executable version is also present. This means that you don't need the C compiler to run these programs. An exception is granted for those programs only of use to people who own a C compiler.

The Fred Fish disk are collected by Mr. Fred Fish, a good and active friend of the Amiga.

Note: Each description line below may include something like 'S-O-E-D', which stands for 'source, object file, executable and documentation'. Any combination of these letters indicates what forms of the program are present. Basic programs are presented entirely in source code format.

AMICUS Disk 1

ABasic programs: Graphics

3DSolids	3d solids modeling prog. w/sample data files
Blocks	draws blocks
Cubes	draws cubes
Durer	draws pictures in the style of Durer
FScape	draws fractal landscapes
Hidden	3D drawing program, w/ hidden line removal
JPad	simple paint program
Optical	draw several optical illusions
PaintBox	simple paint program
Shuttle	draws the Shuttle in 3d wireframe
SpaceArt	graphics demo
Speaker	speech utility
Sphere	draws spheres
Spiral	draws color spirals
ThreeDee	3d function plots
Topography	artificial topography
Wheels	draws circle graphics
Xenos	draws fractal planet landscapes

ABasic programs: Tools

AddressBook	simple database program for addresses
CardFile	simple card file database program
Demo	multiwindow demo
KeyCodes	shows keycodes for a key you press
Menu	run many ABasic programs from a menu
MoreColors	way to get more colors on the screen at once, using aliasing
shapes	simple color shape designer SpeakIt speech and narrator demo

ABasic programs: Games

BrickOut	classic computer brick wall game
Othello	also known as 'go'
Saucer	simple shoot-em-up game
Spelling	simple talking spelling game
ToyBox	selectable graphics demo

ABasic programs: Sounds

Entertainer	plays that tune
HAL9000	pretends it's a real computer
Police	simple police siren sound
SugarPlum	plays "The Dance of the Sugarplum Fairies"

C programs:

ATerm	simple terminal program, S-E
cc	aid to compiling with Lattice C
decvnt	opposite of CONVERT for cross developers
Dotty	source code to the 'dotty window demo
echox	unix-style filename expansion, partial S,O-D
fasterfp	explains use of fast-floating point math
FixDate	fixes future dates on all files on a disk, S-E
freedraw	simple Workbench drawing prog.,S-E
GfxMem	graphic memory usage indicator, S-E
Grep	searches for a given string in a file with docs.
ham	shows off the hold-and-modify method of color generation
IBM2Amiga	fast parallel cable transfers between an IBM and an Amiga
Mandel	Mandelbrot set program, S-E
moire	patterned graphic demo, S-E
objfix	makes Lattice C object file symbols visible to Wack, S-E
quick	quick sort strings routine
raw	example sample window I/O
setlace	turns on interlace mode, S-E
sparks	qix-type graphic demo, S-E

Other executable programs:

SpeechToy	speech demonstration
WhichFont	displays all available fonts

Texts:

68020	describes 68020 speedup board from CSA
Aliases	explains uses of the ASSIGN command
Bugs	known bug list in Lattice C 3.02
CLICard	reference card for AmigaDOS CLI
CLICommands	guide to using the CLI
Commands	shorter guide to AmigaDOS CLI commands
EdCommands	guide to the ED editor
Filenames	AmigaDOS filename wildcard conventions
HalfBright	explains rare graphics chips that can do more colors
ModemPins	description of the serial port pinout
RAMdisks	tips on setting up your RAM: disk
ROMWack	tips on using ROMWack
Sounds	explanation of Instrument demo sound file format
Speed	refutation of Amiga's CPU and custom chip speed
WackCmds	tips on using Wack

AMICUS Disk 2

C programs:

alib	AmigaDOS object library manager , S-E
ar	text file archive program, S-E
fixobj	auto-chops executable files
shell	simple CLI shell, S-E
sq, usq	file compression programs, S-E
YachtC	a familiar game, S-E
Make	a simple 'make' programming utility, S-E
Emacs	an early version of the Amiga text editor, S-E-D

Assembler programs:

bsearch.asm	binary search code
qsort.asm	Unix compatible qsort() function, source and C test program
setjmp.asm	setjmp() code for Lattice 3.02
SVprintf	Unix system V compatible printf()
trees.o	Unix compatible tree() function, O-D

(This disk formerly had IFF specification files and examples. Since this spec is constantly updated, the IFF spec files have been moved to their own disk in the AMICUS collection.)

John Draper Amiga Tutorials:

Animate	describes animation algorithms
Gadgets	tutorial on gadgets
Menus	learn about Intuition menus

AMICUS Disk 3

C programs:

Xref	a C cross-reference gen., S-E
6bitcolor	extra-half-bright chip gfx demo, S-E
Chop	truncate (chop) files down to size, S-E
Cleanup	removes strange characters from text files
CR2LF	converts carriage returns to line feeds in Amiga files, S-E
Error	adds compile errors to a C file, S
Hello	window ex. from the RKM, S
Kermit	generic Kermit implementation, flakey, no terminal mode, S-E
Scales	sound demo plays scales, S-E
SkewB	Rubik cube demo in hi-res colors, S-E

AmigaBasicProgs(dir)

Automata	cellular automata simulation
CrazyEights	card game
Graph	function graphing programs
WitchingHour	a game

ABasiC programs:

Casino	games of poker, blackjack, dice, and craps
Gomoku	also known as 'othello'
Sabotage	sort of an adventure game

Executable programs:

Disassem	a 68000 disassembler, E-D
DpSlide	shows a given set of IFF pictures, E-D
Arrange	a text formatting program, E-D

Assembler programs:

Argoterm	terminal program with speech and Xmodem, S-E

AMICUS Disk 4 Files from the original Amiga Technical BBS

Note that some of these files are old, and refer to older versions of the operating system. These files came from the Sun system that served as Amiga technical support HQ for most of 1985. These files do not carry a warranty, and are for educational purposes only. Of course, that's not to say they don't work.

Complete and nearly up-to-date C source to 'image.ed', an early version of the Icon Editor. This is a little flaky, but compiles and runs.

An Intuition demo, in full C source, including files: demomenu.c, demomenu2.c, demoreq.c, getascii.c, idemo.c, idemo.guide, idemo.make, idemoall.h, nodos.c, and txwrite.c

addmem.c	add external memory to the system
bobtest.c	example of BOB use
consoleIO.c	console IO example
creaport.c	create and delete ports
creastdi.c	create standard I/O requests
creatask.c	creating task examples
diskio.c	example of track read and write
dotty.c	source to the 'dotty window' demo
dualplay.c	dual playfield example
flood.c	flood fill example
freemap.c	old version of 'freemap'
geltools.c	tools for VSprites and BOBs
gfxmem.c	graphic memory usage indicator
hello.c	window example from RKM
inputdev.c	adding an input handler to the input stream
joystik.c	reading the joystick
keybd.c	direct keyboard reading
layertes.c	layers examples
mousport.c	test mouse port
ownlib.c, ownlib.asm	example of making your own library with Lattice
paratest.c	tests parallel port commands
seritest.c	tests serial port commands
serisamp.c	example of serial port use
prinintr.c	sample printer interface code
prtbase.h	printer device definitions
regintes.c	region test program
setlace.c	source to interlace on/off program
setparallel.c	set the attributes of the parallel port
SetSerial.c	set the attributes (parity, data bits) of the serial port
singplay.c	single playfield example
speechtoy.c	source to narrator and phonetics demo
timedely.c	simple timer demo
timer.c	exec support timer functions
timrstuf.c	more exec support timer functions
WhichFont.c	loads and displays all available system fonts

process.i and prtbase.i assmebler include files:

autorqstr.txt	warnings of deadlocks with autorequesters
consoleIO.txt	copy of the RKM console I/O chapter
diskfont.txt	warning of disk font loading bug
fullfunc.txt	list of #defines, macros, functions
inputdev.txt	preliminary copy of the input device chapter

License information on Workbench distribution license

printer pre-release copy of the chapter on printer drivers, from RKM 1.1

v11fd.txt 'diff' of .fd file changes from version 1.0 to 1.1 v28v1.diff 'diff' of include file changes from version 28 to 1.0

AMICUS Disk 5 Files from the Amiga Link / Amiga Information Network

Note that some of these files are old, and refer to older versions of the operating system. These files are from Amiga Link. For a time, Commodore supported Amiga Link, aka AIN, for online developer technical support. It was only up and running for several weeks. These files do not carry a warranty, and are for educational purposes only. Of course, that's not to say they don't work.

A demo of Intuition menus called 'menudemo', in C source

whereis.c	find a file searching all subdirectories
bobtest.c	BOB programming example
sweep.c	sound synthesis example

Assembler files:

mydev.asm	sample device driver
mylib.asm	sample library example
mylib.i	
mydev.i	
asmsupp.i	
macros.i	assembler include files

Texts:

amigatricks	tips on CLI commands
extdisk	external disk specification
gameport	game port spec
parallel	parallel port spec
serial	serial port spec
v1.1update	list of new features in version 1.1
v1.1h.txt	'diff' of include file changes from version 1.0 to 1.1

Files for building your own printer drivers, including dospecial.c, epsondata.c, init.asm, printer.c, printer.link, printertag.asm, render.c, and wait.asm. This disk does contain a number of files describing the IFF specification. These are not the latest and greatest files, but remain here for historical purposes. They include text files and C source examples. The latest IFF spec is elsewhere in this library.

AMICUS Disk 6 IFF Pictures

This disk includes the DPSlide program, which can view a given series of IFF pictures, and the 'showpic' program, which can view each file at the click of an icon. The pictures include a screen from ArticFox, a Degas dancer, the guys at Electronic Arts, a gorilla, horses, King Tut, a lighthouse, a screen from Marble Madness, the Bugs Bunny Martian, a still from an old movie, the Dire Straits moving company, a screen from Pinball Contruction Set, a TV newcaster, the PaintCan, a world map, a Porsche, a shuttle mission patch, a tyrannosaurus rex, a planet view, a VISA card, and a ten-speed.

AMICUS Disk 7 DigiView HAM demo picture disk

This disk has pictures from the DigiView hold-and-modify video digitizer. It includes the ladies with pencils and lollypops, the young girl, the bulldozer, the horse and buggy, the Byte cover, the dictionary page, the robot and Robert. This includes a program to view each picture separately, and all together as separate, slidable screens. The 'seeilbm' program, to turn any screen into an IFF picture.

AMICUS Disk 8

C programs:

Browse	view text files on a disk, using menus S-E-D
Crunch	removes comments and white space from C files, S-E
IconExec	EXECUTE a series of commands from Workbench S-E
PDScreen Dump	dumps Rastport of highest screen to printer
SetAlternate	sets a second image for an icon, when clicked once S-E
SetWindow	makes windows for a CLI program to run under Workbench S-E
SmallClock	a small digital clockin a window menu bar
Scrimper	the screen printer in the fourth AC S-E

Amiga Basic Programs:

(**Note**: Many of these programs are present on AMICUS Disk 1. Several of these were converted to Amiga Basic, & included here.)

AddressBook	a simple address book database
Ball	draws a ball
Cload	program to convert Compuserve hex files to binary, S-D
Clue	the game, Intuition driven
ColorArt	art drawing program
DeluxeDraw	the drawing program in the 3rd AC, S-D
Eliza	conversational computer psychologist
Othello	the game, as known as 'go'
RatMaze	3D ratmaze game
ROR	boggling graphics demo
Shuttle	draws 3D pictures of the space shuttle
Spelling	simple spelling program
YoYo	wierd zero-gravity yo-yo demo, tracks yo-yo to the mouse

Executable programs:

3Dcube	Modula-2 demo of a rotating cube
AltIcon	sets a second icon image, displayed when the icon is clicked
AmigaSpell	a slow but simple spell checker, E-D
arc	the ARC file compression prog must for telecom, E-D
Bertrand	graphics demo
disksalvage	prog. to rescue trashed disks, E-D
KwikCopy	a quick but nasty disk copy program: ignores errors, E-D
LibDir	lists hunks in an object file E-D
SaveILBM	saves any screen as IFF pic.E-D ?? ScreenDump shareware screen dump prog, E only
StarTerm	version 2.0, term program, XmodemE-D

Texts:

LatticeMain	tips on fixing _main.c in Lattice
GDiskDrive	make your own 5 1/4 drive
GuruMed	explains the Guru numbers
Lat3.03bugs	bug list of Lattice C version 3.03
MForgeRev	user's view of the MicroForge HD
PrintSpooler	EXECUTE-based print spool prog.

.BMAP files:

These are the necessary links between Amiga Basic and the system libraries. To take advantage of the Amiga's capabilities in Basic, you need these files. BMAPs are included for 'clist', 'console', 'diskfont', 'exec', 'icon', 'intuition', 'layers', 'mathffp', mathieeedoubas', 'mathieeesingbas', 'mathtrans', 'potgo', 'timer' and 'translator'.

AMICUS Disk 9

Amiga Basic Programs:

FlightSim	simple flight simulator program
HuePalette	explains Hue, Saturation, & Intensity
Requester	ex. of requesters from Amiga Basic
ScrollDemo	demonstrates scrolling capabilities
Synthesizer	sound program
WorldMap	draws a map of the world

Executable programs:

Boing!	latest Boing! demo,with selectable speed,E
Brush2C	converts an IFF brush to C data instructions, initialization code, E
Brush2Icon	converts IFF brush to an icon, E
Dazzle	graphics demo, tracks to mouse, E
DeciGEL	assembler program for stopping 68010 errors, S-E-D
Klock	menu-bar clock and date display, E
life	the game of life, E
TimeSet	Intuition-based way to set the time & date
EMEmacs	another Emacs, more oriented to word processing, S-E-D
MyCLI	a CLI shell, works without the Workbench, S-E-D

Texts:

FnctnKeys	read function keys from Amiga Basic
HackerSln	explains how to win the game 'hacker'
Ist68010	guide to installing a 68010 in your Amiga
Boing!	latest Boing! demo,with selectablespeed, E
Brush2C	converts an IFF brush to C data instructions, initialization code, E
Brush2Icon	converts IFF brush to an icon, E
Dazzle	graphics demo, tracks to mouse, E
DeciGEL	assembler program for stopping 68010 errors, S-E-D
Klock	menu-bar clock and date display, E
life	the game of life, E
TimeSet	Intuition-based way to set the time date,
EMEmacs	another Emacs, more oriented to word processing, S-E-D
MyCLI	a CLI shell, works without the Workbench, S-E-D

Texts:

FnctnKeys	explains how to read function keys from Amiga Basic
HackerSln	explains how to win the game 'hacker'
Ist68010	guide to installing a 68010 in your Amiga
PrinterTip	sending escape sequences to your printer
StartupTip	tips on setting up your startup-sequence file
XfrmrReview	list of Transformer programs that work

Printer Drivers:

Printer drivers for the Canon PJ-1080A, the C Itoh Prowriter, an improved Epson driver that eliminates streaking, the Epson LQ-800, the Gemini Star-10, the NEC 8025A, the Okidata ML-92, the Panasonic KX-P10xx family, and the Smith-Corona D300, with a document describing the installation process.

AMICUS Disk 10 Instrument sound demos

This is an icon-driven demo, circulated to many dealers. It includes the sounds of an acoustic guitar, an alarm, a banjo, a bass guitar, a boink, a calliope, a car horn, claves, water drip, electric guitar, a flute, a harp arpegio, a kickdrum, a marimba, a organ minor chord, people talking, pigs, a pipe organ, a Rhodes piano, a saxophone, a sitar, a snare drum, a steel drum, bells, a vibrophone, a violin, a wailing guitar, a horse whinny, and a whistle.

AMICUS Disk 11

C programs

dirutil	Intuition-based, CLI replacement manager S-E
cpri	shows and adjusts priority of CLI processes, S-E
ps	shows info on CLI processes, S-E
vidtex	displays Compuserve RLE pics, S-E

AmigaBasic programs

pointered	pointer and sprite editor program
optimize	optimization ex ample from AC article
calendar	large, animated calendar, diary and date book program
amortize	loan amortizations
brushtoBOB	converts small IFF brushes to AmigaBasic BOB OBJECTS
grids	draw and play waveforms
hilbert	draws Hilbert curves
madlib	mad lib story generator
mailtalk	talking mailing list program
meadows3D	3D graphics program, from A C™ article
mousetrack	mouse tracking example in hires mode
slot	slot machine game
tictactoe	the game
switch	pachinko-like game
weird	makes strange sounds

Executable programs

cp	unix-like copy command, E
cls	screen clear, S-E
diff	unix-like stream editor uses 'diff' output to fix files
pm	chart recorder performances indicator

Assembler programs

cls	screen clear and CLI arguments example

Modula-2

trails	moving-worm graphics demo
caseconvert	converts Modula-2 keywords to uppercase
Forth	Breshehan circle algorithm example
Analyze	12 templates for the spreadsheet Analyze

There are four programs here that read Commodore 64 picture files. They can translate Koala Pad, Doodle, Print Shop and News Room graphics to IFF format. Getting the files from your C-64 to your Amiga is the hard part.

AMICUS Disk 12

Executable programs

blink	'alink' compatible linker, but faster, E-D
clean	spins the disk for disk cleaners, E-D
epsonset	sends Epson setttings to PAR from menu E-D
showbig	view hi-res pics in low-res superbitmap, E-D
speaktime	tell the time, E-D
undelete	undeletes a file, E-D
cnvapldhm	converts Apple][low, medium and high res pictures to IFF, E-D
menued	menu editor produces C code for menus, E-D
quick	quick disk-to-disk nibble copier, E-D
quickEA	copies Electronic Arts disks, removes protection, E-D
txed 1.3	demo of text editor from Microsmiths,E-D

C programs

spin3	rotating blocks graphics demo, S-E-D
popcli	start a new CLI at the press of a button, like Sidekick, S-E-D
vsprite	VSprite example code from Commodore, S-E-D
AmigaBBS	Amiga Basic bulletin board prog., S-D

Assembler programs

star10	makes star fields like Star Trek intro,S-E-D

Pictures

Mourt Mandelbrot	3D view of Mandelbrot set
Star Destroyer	hi-res Star Wars starship
Robot	robot arm grabbing a cylinder

Texts

vendors	Amiga vendors, names, addresses
cardco	fixes to early Cardco memory boards
cinclude	cross-reference to C include files
mindwalker	clues to playing the game well
slideshow	make your own slideshows from the Kaleidoscope disk

For PDS orders, please use form on page CIII
Visa and MasterCard is available on orders of $20.00 or more.

AMICUS Disk 13

Amiga Basic programs

Routines from Carolyn Scheppner of CBM Tech Support, to read and display IFF pictures from Amiga Basic. With documentation. Also included is a program to do screen prints in Amiga Basic, and the newest BMAP files, with a corrected ConvertFD program. With example pictures, and the SaveILBM screen capture program.

Routines to load and play FutureSound and IFF sound files from Amiga Basic, by John Foust for Applied Visions. With documentation and C and assembler source for writing your own libraries, and interfacing C to assembler in libraries. With example sound.

Executable programs

gravity	Sci Amer Jan 86 gravitation graphic simulation, S-E-D

Texts

MIDI	make your own MIDI instrument interface, documentation & a hi-res schematic.

AMICUS Disk 14

Several programs from Amazing Computing issues:

Tools

Dan Kary's	C structure index program, S-E-D

Amiga Basic programs:

BMAP Reader	by Tim Jones
IFFBrush2BOB	by Mike Swinger
AutoRequester	example
DOSHelper	Windowed help system for CLI commands, S-E-D
PETrans	translates PET ASCII files to ASCII files, S-E-D
C Squared	Graphics program from Scientific American, Sept 86, S-E-D
crlf	adds or removes carriage returns from files, S-E-D
dpdecode	decrypts Deluxe Paint, remo
ves copy	protection, E-D
queryWB	asks Yes or No from the user returns exitt code, S-E
vc	VisiCalc type spreadsheet, no mouse control, E-D
view	views text files with window and
slider	gadget, E-D

Oing, Sproing, yaBoing, Zoing are sprite-based Boing! style demos, S-E-D

CLIClock, sClock, wClock are window border clocks, S-E-D

Texts

An article on long-persistance phospor monitors, tips on making brushes of odd shapes in Deluxe Paint, and recommendations on icon interfaces from Commodore-Amiga.

AMICUS Disk 15

The C programs include:

'pr'	a file printing utility, which can print files in the background, and with line numbers and control character filtering.
'fm'	displays a chart of the blocks allocated on a disk.
'Ask'	questions an 'execute' file, returns an error code to control the execution in that batch file
'Stat'	an enhanced version of AmigaDOS 'status' command.
'Dissolve'	random-dot dissolve demo displays IFF picture slowly, dot by dot, in a random fashion.
'PopCLI2'	invoke new CLI window at the press of a key.

The executable programs include:

'Form'	file formatting program through the printer driver to select print styles
'DiskCat'	catalogs disks, maintains, sorts,merges lists of disk files
'PSound'	SunRize Industries' sampled sound editor & recorder'
'Iconmaker'	makes icons for most programs
'Fractals'	draws great fractal seascapes and mountain scapes.
'3D Breakout'	3D glasses, create breakout in a new dimension
'AmigaMonitor'	displays lists of open files,
memory use,	tasks, devices and ports in use.
'Cosmoroids'	version of 'asteroids' for the Amiga.
'Sizzlers'	high resolution graphics demo writteN in Modula 2.

Texts:

'ansi.txt'	explains escape sequences the CON: device responds to.
'FKey'	includes template for making paper to sit in the tray at the top of the Amiga keyboard.
'Spawn'	programmer's document from Commodore Amiga, describs ways to use the Amiga's multitasking capabilities in your own programs.

AmigaBasic programs:

'Grids'	draw sound waveforms, and hear them played.
'Light'	a version of the Tron light-cycle video game.
'MigaSol'	a game of solitaire.
'Stats'	program to calculate batting averages
'Money'	"try to grab all the bags of money that you can."

AMICUS 15 also includes two beautiful IFF pictures, of the enemy walkers from the ice planet in Star Wars, and a picture of a cheetah.

AMICUS Disk 16

'juggler' demo by Eric Graham. a robot juggler bouncing three mirrored balls, with sound effects. Twenty-four frames of HAM animation are flipped quickly to produce this image. You control the speed of the juggling. The author's documentation hints that this program might someday be available as a product.

IFF pictures

parodies of the covers of Amiga World and Amazing Computing.

C programs:

'Inputhandler'	example of making an input handler.
'FileZap3'	binary file editing program
'ShowPrint'	displays IFF picture, and prints it.
'Gen'	program indexes and retrieves C structures and variables declared in the Amiga include file system.

Executable Programs:

'FixHunk2'	repairs an executable program file for expanded memory
'ms2smus'	converts Music Studio files to IFF standard 'SMUS' format. I have heard this program might have a few bugs, especially in regards to very long songs, but it works in most cases.
'Missile'	Amiga version of the 'Missile Command' video game,

This disk also contains several files of scenarios for Amiga Flight Simulator II. By putting one of these seven files on a blank disk, and inserting it in the drive after performing a special command in this game, a number of interesting locations are preset into the Flight Simulator program. For example, one scenario places your plane on Alcatraz, while another puts you in Central Park

AMICUS Disk 17

Telcommunications disk whuch contains six terminal programs.

"Comm" V1.33	term prog. with Xmodem, WXmodem,
"ATerm" V7.2	term prog. includes Super Kermit
"VT-100"V2.6	Dave Wecker's VT-100 emulator with Xmodem,Kermit, and scripting
"Amiga Kermit"	V4D(060) port of the Unix C-Kermit
"VTek" V2.3.1	Tektronix graphics terminal emulator based on the VT-100 prog. V2.3 and contains latest 'arc' file compression
"AmigaHost"	V0.9 for Compuserve. Includes RLE graphics abilities & CIS-B file transfer protocol.
"FixHunk"	expansion memory necessity
"FixObj"	removes garbage characters from modem received files
"Txt"	filters text files from other systems to be read by the Amiga E.C.
"addmem"	executeable version for use with mem expansion article in AC v2..1
'arc'	file documentation and a basic tutorial on un 'arc'ing files
"arcre"	for makeing "arc" files E.C.

AMICUS Disk 18

Logo	Amiga version of the popular computer language, with example programs, E-D
Tv*Text	Demo version of the TV*Text character generator
PageSetter	Freely distributable versions of the updated PagePrint and PageIFF programs for the PageSetter desktop publishing package.
FullWindow	Resizes any CLI window using only CLI commands, E-D
Life3d	3-D version of Conway's LIFE program, E-D
Defdisk	CLI utility to re-assign a new Workbench disk, S-E-D
Calendar.WKS	Lotus-compatible worksheet that makes calendars
SetKey	Demo of keyboard key re-programmer, with IFF picture to make function key labels, E-D
VPG	Video pattern generator for aligning monitors, E-D
HP-10C	Hewlett-Packard-like calculator, E-D
SetPrefs	Change the Preferences settings on the fly, in C, S-E-D
StarProbe	Program studies stellar evolution. C source included for Amiga and MS-DOS, S-E-D
ROT	C version of Colin French's AmigaBasic ROT program from Amazing Computing. ROT edits and displays polygons to create three dimensional objects. Up to 24 frames of animation can be created and displayed. E-D
Scat	Like Ing, windows on screen run away from the mouse, E-D
DK	Decays" the CLI window into dust, in Modula 2, S-E-D
DropShadow2	Adds layered shadows to Workbench windows, E-D

AMICUS Disk 19

This disk carries several programs from Amazing Computing. The IFF pictures on this disk include the Amiga Wake part T-shirt logo, a sixteen-color hi-res image of Andy Griffith, and five Amiga Live! pictures from the Amazing Stories episode that featured the Amiga.

Solve	Linear equation solver in assembly language, S-E-D
Gadgets	Bryan Catley's AmigaBasic tutorial, S-D
Household	Bryan Catley's AmigaBasic household inventory program, S-D
Waveform	Jim Shields' Waveform Workshop: AmigaBasic, S-D
DiskLib	John Kennan's AmigaBasic disk librarian program, S-D
Subscripts	Ivan Smith's AmigaBasic subscript example, S-D
String, Boolean	C programs and executables for Harriet Maybeck Tolly's Intuition tutorials, S-E-D
Skinny C	Bob Riemersma's example for making small C programs, S-E-D
COMAL.h	Make C look like COMAL header file, S-D
EmacsKey	Makes Emacs function key definitions by Greg Douglas, S-D
AMon 1.1	Snoop on system resource use, E-D
BTE	Bard's Tale character editor, E-D
Size	CLI program shows the size of a given set of files, E-D
WinSize	CLI window utility resizes current window, S-E-D

AMICUS Disk 20

Compactor, Decoder	Steve Michel AmigaBasic tools, S-D
BobEd	BOB and sprite editor written in C,S-E-D
SpriteMasterII	Sprite editor and animator by Brad Kiefer, E-D
BlitLab	Blitter chip exploration C program by Tomas Rokicki, S-E-D
FPic	Image processing program by Bob Bush loads and saves IFF images, changes them with several techniques, E-D
Bankn	Complete home banking prog., balance your checkbook! E-D

AMICUS Disk 21

Target	Makes each mouse click sound like a gunshot, S-E-D
Sand	Simple game of sand that follows the mouse pointer, E-D
PropGadget	Harriet Maybeck Tolly's proportional gadget example, S-E
EHB	Checks to see if you have extra-half-bright graphics, S-E-D
Piano	Simple piano sound program
CelScripts	Makes cel animation scripts for Aegis Animator, in AmigaBasic

This disk has electronic catalogs for AMICUS disks 1 to 20 and Fish disks 1 to 80. They are viewed with the DiskCat program, included here.

AMICUS Disk 22

Cycles	Light cycle game, E-D
Show_PrintII	Views and prints IFF pictures, including larger than screen
PrtDrvGen2.3	Latest version of a printer driver generator
Animations	VideoScape animations of planes and boing ball
Garden	Makes fractal gardenscapes
BasicSorts	Examples of binary search and insertion sort in AmigaBasic

AMICUS Disk 23

An AMICUS disk completely dedicated to music on the Amiga. This disk contains two music players, songs, instruments, and players to bring the thrill of playing "Big Sound" on your Amiga

Instruments	a collection of 25 instruments for playing and creating music. The collection ranges from Cannon to Marimba
List INSTR	program to list the instruments DMCS will not load as well as list the origins for any instrument.
Music	a collection of 14 Classical pieces
1812Overture	The 16 minute classical feature complete with Cannon!

Three Amiga Music Players:

SMUSPlay

MusicCraft2SMUS

MusicStudio2SMUS

AMICUS Disk 24

Sectorama	A disk sector editor for any AmigaDOS file-structured device, recover files from a trashed hard disk. By David Joiner of MicroIllusions
Iconize	Reduces the size of IFF images, companion program, Recolor, remaps the palette colors of one picture to use the palette colors of another. Using these programs and a tool to convert IFF brushes to Workbench icons, make icons look like miniatures of the pictures.
CodeDemo	Modula-2 program converts assembler object files to inline CODE statements. Comes with a screen scrolling example
AmiBug	Workbench hack makes the same fly walk across the screen at random intervals. Otherwise, completely harmless.
BNTools	Three examples of assembly language code from Bryce Nesbitt: 1. SetLace,prog to switch interlace on&off. 2. Why, replace AmigaDOS CLI Why 3. LoadIt, prog to load a file into memory until a reboot. (Only the most esoteric hackers will find LoadIt useful.)
Monolace	CLI program resets Preferences to several colors of monochrome & interlace screens. C source is included, works with DisplayPref, a CLI program which displays the current Preferences settings.
BoingMachine	A ray-traced animation of a perpetual motion Boing-making machine, includes the latest version of the Movie program, which has the ability to play sounds along with the animation. By Ken Offer
Daisy	Example of using the translator and narrator devices to make the Amiga talk. It is written in C.
QuickFlix	Script-driven animation and slideshow program flips through IFF images.
BMon	System monitor AmigaBasic program ; perform simple manipulations of memory.
Moose	Random background program, a small window opens with a moose resembleing Bullwinklesaying witty phrases user definable.
DGCS	Deluxe Grocery Construction Set, simple Intuition-based prog for assembling and printing a grocery list.

The Virus Check directory holds several programs relating to the software virus that came to the US from pirates in Europe as detailed in Amazing Computing V2.12. Bill Koester's full explanation of the virus code is included. One program checks for the software virus on a Workbench disk; the second program checks for the virus in memory, which could infect other disks.

AMICUS Disk 25

Nemesis	Graphics demo pans through space towards the mythical dark twin of the sun with wonderful music and space graphics.

The KickPlay directory holds text that describes several patches to the Kickstart disk. For Amiga 1000 hackers who feel comfortable patching a disk in hexadecimal, KickPlay offers the chance to automatically do an ADDMEM for old expansion memory, as well as the ability to change the picture of the "Insert Workbench" hand. A program is also included for restoring the correct checksum of the Kickstart disk.

KeyBird	BASIC prog edits keymaps, adjust the Workbench keymaps or create your own.
8ColorWB	Modifies the Workbench so three bitplanes are used, icons can have eight colors, instead of four, eight-color icons are included. Public domain program "zapicon" or "brush2icon" converts eight-color IFF brushes to icons, to use Deluxe Paint to make icons for this new Workbench.
BrushIcon	Converts brushes to icons (bizarr docs).
Egraph	Graphing prog reads [x,y] values from a file and displays them on the screen, similar to the same-named Unix program.
Keep 1.1	Message-managing program for telecommunications, lets you save messages from an online transcript to another file, understands the message format of the national networks and several types of bulletin board software. Moves through the transcript and save messages
Kill.fastdir	Speed up directory access, it creates a small file in each directory on a disk which contains the information about the files, will also remove all the "fastdir" files from each directory. by CLImate's authors

The LaceWB program changes between interlace and non-interlace Workbench. Previously, you were forced to reboot after changing Preferences to an interlaced screen. This program flips between the normal and extended screen heights.

PW_Utility	A shareware utility for ProWrite users, changes margin settings and font types.
Guru	A CLI program, prints out probable causes for Guru mediations; C source included.
DiskWipe	Latest from Software Distillery, removes files from directories or disk drives, much faster than "delete."
Snow	AmigaBasic makes snowflake designs.
Mlist	Mailing list database.
Softballstats	Maintain softball statistics/ team records.
Dodge	Short Modula-2 program moves the Workbench screen around after a period of time, prevents monitor burn-in.

AMICUS Disk 26

Todor Fay's SoundScape module code from his Amazing Computing articles. The source to Echo, Chord, TX, and VU is included. The Lattice and Manx C source code is here, along with the executable modules.

Claz2	Update of prog to convert IFF images to PostScript files for printing on laser printers
SDBackup	Hard disk backup prog with Lempel-Ziv compression to reduce the necessary number of disks.
TCB	Prints information about tasks and processes in the system; assembler source is included.
FunBut	Lets a function key act like a rapid series of left mouse button events.
DC	A handy program for people who use an Amiga 1020 5 1/4 inch drive as an AmigaDOS floppy. A Workbench program that sends a DiskChange signal to the operating system: instead of typing "diskchange df2:" over and over again, just click on the icon. C source included.
System config	File makes screen 80 columns wide of text in the Scribble! word processor.
Dick2Ram	2 programs to move the Scribble! spelling dictionary to and from the RAM disk.
Lexical	Analyzes a text file and gives the Gunning-Fog, Flesch, and Kincaid indices which measure readability.
HexDump	Modula-2 program to display memory locations in hexadecimal.
Tartan	AmigaBasic; design Tartan plaids.
DirMaster	Disk catalog program.
BMP	plays 8SVX sampled sounds in the background while something else is happening in the Amiga, as your Amiga is booting, for example.
ShowPt	CLI program changes your pointer to a given pointer.

AMICUS 26 also has a collection of mouse pointers, & Workbench program to display them

SORRY...

Do to the ever increasing size of the Fred Fish Collection, AC will no longer be able to maintain a complete catalog of Public Domain Software in every issue. However, AC will continue to update this abrievated catalog with new additions to the library. A full catalog of every disk and program in the Amicus and Fred Fish Libraries is available in the current issue of:

AC's GUIDE AMIGA

At your local Amazing Dealer

Fred Fish Public Domain Software

Fred Fish Disk 179

DietAid	Diet planning aid to allow the user to compile lists of ingredients (recipes) and automatically compute calorie totals, etc. Update FF36. V3.1, binary only. by Terry Gintz
Dmake	Beta release of Matt's version of the UNIX make utility. Features multiple dependancies, wildcard support, and more. Includes source. By Matt Dillion
Excption	Exception is a set of error handling routines that provide a programmer with the ability to easily handle often difficult to implement routines. Routines such as no more memory, file not open, read/write error....etc. V0.6, includes source. By Gerald T Hewes
KickFont	For A-1000 owners, will permanently replace the topaz font on the kickstart disk with a font called "look". Includes a sample in the form of an IFF picture. V3.0, binary only. Also included is Benjamin Fuller's freely redistributable 'SumKick' program. By Greg Browne
Launch	Sample program showing how you can load and execute a program in the workbench environment, then return to the CLI. Includes source. By Peter da Silva
Regexp	A nearly-public-domain reimplementation of the V8 regexp(3) package. Gives C programs the ability to use egrep-style regular expressions, and does it in a much cleaner fashion than the analogous routines in SysV. Includes source. By Henry Spencer
TSnip	Very nice "cut and paste" type utility with lots of uses and functions. Features a pop-up intuition control panel, multiple font and color recognition, clipboard and pipe support and a couple of utility programs. V1.4a, source for support programs only. By John Russell
UnixUtil	A few CLI utilities, including some functionally similiar to the UNIX utilities of the same names. Included are: Wc, Head, Tail, Tee, Detab, Entab, and Trunc. Descriptions are given in the included '.doc' files. By Gary Brant

Fred Fish Disk180

Browser	A programmer's "Workbench". Allows you to easily and conveniently move, copy, rename, and delete files & directories from a CLI environment. Also provides a method to execute either Workbench or CLI programs. V1.6, update to FF134, binary only. By Peter da Silva
GeoTime	A couple of interesting "clock" type programs based on the "Geochron". Observe the earth's shadow scroll across a map or globe in real-time, based on the system clock. V1.0, binary only, shareware. By Mike Smithwick
GPrint	A black & white graphics print utility for Epson compatible printers. Command-line options allow several different print qualities and densities. Includes a couple of sample IFF files for printing. V2.03, binary only, shareware. By Peter Cherna
Jed	A nicely done, intuition-based editor that is quite user-friendly. Features word-wrap, auto-indent, newcli, alt buffer, split-window, keyboard macro, help, printing, and more. V1.0, binary only, shareware. By Dan Burris
NoVirus	Another Anti-Virus utility. This one features known and new virus detection, view boot block, save and restore bootblocks, several "Install" options and more. Written in assembly. V1.56, binary only. By Nic Wilson
RepString	Nice little CLI utility to replace any type of string in any type of file with another string of any type. V1.0, binary only, shareware. By Luciano Bertato
TrekTrivia	Very nice mouse-driven trivia type program for Star Trek fans. Contains 100 questions with additional trivia disks available from the author. Binary only, shareware. By George Broussard

Fred Fish Disk 181

AMXLISP	Amiga-ized version of the XLisp interpreter originally by David Betz. V2.00, includes source. By David Betz; Amiga work by Francois Rouaix
Bally	Amiga port of the former arcade game named Click. Lacks sound effects,promised for later updates. V0.1, binary only, shareware. By Oliver Wagner
Tracker	Useful debugging routines similar in function but more versatile to those of "MemTrace" on FF163. Will track and report on calls to AllocMem(), FreeMem() [or lack thereof!] among others. V0.0a (Alpha release). By Karl Lehenbauer

Fred Fish Disk 182

AMC	"Amiga Message Center". Scrolls a message from a text file across the screen on a colorful background. Similar to the "greetings" programs developed by European Amiga enthusiasts. V1.0, binary only. By Foster Hall
Edimap	A keymap editor. Allows you to read in an existing keymap file, modify it to suit your needs, and save it as a ready-to-use keymap. V1.0, includes source. Author: Gilles Gamesh
HR136	An IFF file containing a chart showing every possible mixture of the sixteen basic palette colors. Also included are optimized and monochrome palettes along with several tips and techniques for using them with various paint programs.By Dick Bourne
Iconmerger	Intuition-based program to take any two brush files and merge them into an alternate-image type icon. V2.0, binary only. By Terry Gintz
Sam	Another IFF sound player with several command-line options. Includes several samples. V1.0, binary only. By Nic Wilson
SetFont	Allows you to change the system font with various command-line options. Cleans up all known bugs in FF75. V2.5, includes source in C++. By Dave Haynie

Fred Fish Disk 183

FixFd	A utility for Amiga assembly programmers. FixFd will read a '.FD' file and output a file that can be 'INCLUDE'ed rather than having to link with the colossal 'Amiga.Lib'. V1.0, includes source in assembly. By Peter Wyspianski
Mklib	Another example of building a shared library that evolved from "Elib" FF87. Also included is a library, Edlib, which contains several functions not included in the Manx standard libraries. Includes source. By Edwin Hoogerbeets with C-functions from several different authors

For PDS orders, please use form on page CIII
Visa and MasterCard is available on orders of $20.00 or more.

PCQ	A subset implementation of a freely-redistributable Pascal compiler. Supports include files, external references, records, enumerated types, pointers, arrays, strings and more. Presently does not support range types, the 'with' statement or sets. V1.0, includes source and sample programs. By Patrick Quaid

Fred Fish Disk 184

BI	A small brush to to C-code image converter, intended to be used from CLI. V1.0, binary only. By Terry Gintz
CardMaker	A programmer's aid for creating card image data that can be used in any card game that uses the standard 52 card deck. V1.0, binary only. By Terry Gintz
DPS	Demo version of a program that will allow you to take any IFF file and save it as a totally self-contained executable file, without the need for any IFF-viewers. V1.0, binary only. By Foster Hall
MouseUtil	Intuition based program to allow you to change your mouse speed without having to go through preferences. V1.1, includes assembly source. By Luciano Bertato
Print	Small print utility designed to replace the "copy <filename> to prt:" command. Opens a window displaying the filename being printed, length, and a status bar showing percent completed. Also includes an abort gadget. V1.0, binary only. By Luciano Bertato
VacBench	This amusing little screen hack will "clean up" your WorkBench screen for you when it gets too cluttered! Binary only. By Randy Jouett
World	A text adventure game similar to the Infocom adventures of Planetfall and Starcross. Quite large with a tremendous variety of responses. V1.02, includes source. By Doug Mcdonald, Amiga port by Eric Kennedy

Fred Fish Disk 185

Commodore IFF	This is a copy of the official November 1988 Commodore IFF disk. All the files in the "documents" directory are in zoo file "documents.zoo"

Fred Fish Disk 186

A68k	A 68000 assembler originally written in Modula-2 in 1985 and converted to C by Charlie Gibb in 1987. Has been converted to accept metacomco-compatible assembler source code and to generate Amiga objects. Includes source. This is V2.42, an update to FF110. By Brian Anderson; C translation and Amiga work by Charlie Gibb
Cards'O'Rama	A simple game that let's you push your memory. It is played with a deck of 32 cards, grouped in 16 pairs. The cards are shuffled and then displayed at the beginning of each game. Your goal is to pick up as many pairs as you can, until there are no cards left on the screen. V1.0, includes source. By Werther Pirani
Qt2	A cute program that gives the time the way many people actually do, I.E. "it's nearly ten to five". Includes source in assembly. By Charlie Gibb
SimCPM	A CP/M simulator for the Amiga. Simulates an 8080 along with H19 terminal emulation. Includes source. This is V2.3, an update to FF109. By Jim Cathey; Amiga port by Charlie Gibbs and Willi Kusche

Fred Fish Disk 187

Diskperf	A disk benchmark program which runs on both Unix and the Amiga. This is an update to FF48, with bug fixes and more reliable measurements of the faster read and write speeds available under the new Fast File System. By Rick Spanbauer, enhancements by Joanne Dow
HackLite	This is the latest version the Amiga port of Hack, with lots of Amiga specific enhancements and neat graphics. Now includes an easy to use installation program. This is HackLite V1.0.0, binary only. By Software Distillery
Mackie	A versatile cli/macro-key initiator based on POPCLI with a unique method of "screen-blanking". I won't say more, just try it! V 1.13, includes source. This is an update to FF161. By Tomas Rokicki
SetCPU	A program designed to allow the user to detect and modify various parameters related to 32 bit CPUs. Includes commands to enable or disable the text/data caches, switch on or off the '030 burst cache line fill request, use the MMU to run a ROM image from 32-bit memory, and to report various parameters when called from a script. V1.4, includes source. By Dave Haynie

Fred Fish Disk 188

BootIntro	This program creates a small intro on the bootblock of any disk, which will appear after you insert th. disk for booting. The headline can be up to 20 characters. The scrolling text portion can be up to 225 characters. V1.0, binary only. By Roger Fischlin
DiffDir	Diffdir compares the contents of two directories, reporting on differences such as files present in only one directory, different modification dates, file flags, sizes, comments, etc. V1.0, includes source. By Mark Rinfret
ExecDis	A disassembler comment generator program for the 1.2 Kickstart ROM exec library image. Generates a commented disassembly of the exec library. V1.0, binary only. By Markus Wandel
FastGro	A fractal program, simulating Diffusion-Limited Aggregation (DLA) as described in the December 1988 Scientific American in the Computer Recreations column. This program is about an order of magnitude faster than the "SLO GRO" program described in Scientific American. V 1.0, includes source. By Doug Houck
FracGen	A fractal generator program that generates fractal pictures from "seeds" that you create. This is unlike any of the other "fractal generators" I've seen. It can be used to load and display previously created fractal pictures, modify existing fractals, or create your own fractals. V 1.23, binary only, update to FF142. By Doug Houck
MemoryClock	A clock program that shows the amount of free fast ram, free chip ram, as well as the time and date. Includes source in assembly code. By Roger Fischlin
MinRexx	A simple ARexx interface which can be easily patched into almost any program. Includes as an example the freedraw program from FF1. Includes source. By Tomas Rokicki
Null	A new dos device that behaves like "NIL:" but unlike "NIL:", it is a real handler. This makes it useful in lots of situations where "NIL:" cannot be used. V 0.0, includes source. By Gunnar Nordmark
TextDisplay	A text display program, like "more" or "less", but about half the size and handles all screen formats (pal/ntsc, interlace/non-interlace, etc). V 1.1, binary only. By Roger Fischlin

Fred Fish Disk 189

Mackie	A versatile cli/macro-key initiator based on POPCLI wit a unique method of "screen-blanking". I won't say more, just try it! Version 1.20, includes source. update of FF187. Author: Tomas Rokicki
NetHack	This is part 1 of a two part distribution of NetHack, which was too large to fit on a single disk, even when zoo'd. Part 2 is on disk 190. Both parts, along with zoo to unpack them, are required to use or rebuild NetHack. V 2.3. Includes source. Author: Various; Amiga work by Olaf Seibert
Uedit	V 2.4g shareware editor. Has learn mode, a command language, menu customization, and other user configurability and customizability features. Binary only, shareware, Update to FF 173 Author: Rick Stiles

Fred Fish Disk 190

GaryIcons	A collection of more interesting and useful icons. Author: Gary Roseman
LBM2Image	Takes an IFF picture and generates a C source module which can be compiled and linked with your program to display the picture with the intuition DrawImage function. Binary only. by: Denis Green
NetHack	This is part 2 of a two part distribution of NetHack, which was too large to fit on a single disk, even when zoo'd. Part 1 is on disk 189. Both parts, along with zoo to unpack them, are required to use or rebuild NetHack. V 2.3 Includes source. Author: Various; Amiga work by Olaf Seibert

Fred Fish Disk 191

BlitLab	Blitlab is a program which lets you experiment with the blitter, to your hearts content, in relative safety. It opens a workbench window with gadgets for all the registers of the blitter, and allows you to manipulate individual registers and perform blits on a magnified bitmap. V 1.4, an update to FF84. Includes source. Author: Tomas Rokicki
Blk	A requester making tool employing various recursive algorithms including a recursive parser. It takes input text files and converts them to C-source for including as requester declarations. Update to FF152, with many enhancements. Includes source. Author: Stuart Ferguson
FileBootBlock	This simple little program reads blocks 0 and 1 of a bootable disk and saves them as a program file that can be run (heaven forbid) or disassembled by programs like DIS or DSM. Includes source in assembly code. by: John Veldthuis
Spell	A port of a Unix version of a freely distributable screen oriented, interactive, spelling checker. Update to FF54, with enhancements by Tomas Rokicki. V2.0.02, includes source. Author: Pace Willisson; enhancements by Tomas Rokicki
Pz15	Computer version of those cheap plastic puzzles with 15 white tiles numbered 1 through 15 and an empty square in a 4 by 4 arrangement. This one is more challenging since you can't solve it by just prying out the pieces. Includes source. Author: Mike Hall

Fred Fish Disk 192

Eval	This package allows you to manipulate expressions. Currently its two main functions are evaluation and differentiation. It also does some basic simplifications (based on pattern matching) to make the result of a differentiation more presentable. Includes source. Author: David Gay
PacMan87	This is a nice little "pacman like" game with some new features like fire pits, stabbing knives, electric arcs and flame throwers, that must be avoided. Has three levels of difficulty, easy, medium, and hard. Sounds can be toggled on or off. Keeps a record of the top ten scores. Shareware, binary only. Author: Steve Jacobs and Jim Boyd
ReSourceDemo	A demo version of ReSource, an interactive disassembler for the Amiga. This is a complete version except that the "save" features have been disabled. V0.36, binary only. by: Glen McDiarmid

Fred Fish Disk 193

KeyMapEd	Allows you to change the KeyMaps used with SetMap This is a full featured editor providing support for normal, string and dead keys. The keyboard represented is from an A2000/A500 but it is fully compatible with A1000 keyboards. V1.02, includes source Author: Tim Friest
Zc	This is a modified version of the Sozobon C compiler fromFF171. It has been modified to generate code compatible with the A68k assembler from FF186 and a new frontend control program makes it easy to use like the UNIX "cc" frontend. V1.01, includes source. by: Johann Ruegg; Amiga work by Joe Montgomery

Fred Fish Disk 194

Moria	A single player dungeon simulation. The object of the game is to defeat the Balrog, which lurks in the deepest levels of the dungeon. You begin at the town level above the dungeon, where you may acquire supplies, weapons, armor, and magical devices by bartering with various shop owners, before descending into the dungeon to do battle. Amiga enhancements include pull down menus, graphics mode, pickup mode, a continuous move mode, a real time mode, a message wait time mode, as well as other modifications to improve overall playability and to take advantage of the unique features of the Amiga. V3.0, binary only, requires at least 1Mb of memory. Author: Robert Alan Koeneke and others. Amiga version by Richard Henderson and others.

Fred Fish Disk 195

MicroEMACS	Version 3.10 of Daniel Lawrence's variant of Dave Conroy's microemacs. This is an update to the version released on disk 119. New features include multiple marks, more function key support, a better crypt algorithm, and end-of-word command, a command line switch for setting environment variables, new hooks for macros, a command to strip trailing whitespace, international-zation features like foreign language message support, horizontal window scrolling, much faster search algorithm, Amiga intuition support, and more. Includes source and extensive online documentation. Author: Dave Conroy, MANY enhancements by Daniel Lawrence

Fred Fish Disk 196

HamPics	These are some of the most stunning digitized pictures yet for the Amiga. They were scanned at a resolution of 4096 by 2800 pixels, 36-bits per pixel, on an Eikonix 1435 slide scanner, cropped, gamma corrected, scaled, and converted to Amiga IFF HAM files. They are displayed with a special ILBM loader that handles overscan HAM images. Includes source for the display program. Author: Jonathan Hue

Fred Fish Disk 197

CTags	Create a tags file from the specified C, Pascal, Fortran, YACC, lex, or lisp sources. A tags file can be used by a cooperating editor to quickly locate specified objects in a program's source code. Berkeley V4.7, includes source. Author: Ken Arnold, Jim Kleckner, and Bill Joy Ported to Amiga by G. R. (Fred) Walter
Find	Find is a utility which searches for files that satisfy a given boolean expression of attributes, starting from a root pathname and searching recursively down through the hierarchy of the file system. Very much like the Unix find program. V1.2, includes source. Update to FF134 Author: Rodney Lewis
FixHunk	A program to modify executable files to allow them to run in external memory. It forces all DATA and BSS hunks in the file to be loaded into CHIP memory. CODE hunks will still load into FAST ram if available. New features include an interactive mode to select where each DATA or BSS hunk will load into memory, support for overlays, support for AC BASIC compiled programs, and support for new hunk types as used by "blink". V2.1, binary only. Update to FF36. Author: D.J. James
Nro	Another roff style text formatter. This is version 1.5, an update to the version released on disk 79. New features include generation of ANSI/ISO codes for bold, italics, and underline, more than one formatting command on a line, longer macro names, and many more formatting commands. Includes source. Author: Unknown, posted to usenet by Alan Vymetalik Many enhancements by Olaf Seibert
Stevie	A public domain clone of the UNIX 'vi' editor. Supports window-sizing, arrow keys, and the help key. V3.35a, includes source. Update to FF166. Author: Various, Amiga work by G. R. (Fred) Walter

Fred Fish Disk 198

Charon	Charon is Bradley's entry for the First Annual Badge Killer Demo Contest. The text of the demo was written by Lord Dunsany (long before the Amiga). Bradley created the illustrations and animation. The sound track is a traditional Scottish tune "The Arran Boat". by: Lord Dunsany (1915), Bradley Schenck (1988)

Fred Fish Disk 199

ASimplex	An implementation of the Simplex algorithm for solving linear programs. It uses the standardized MPSX-format for input data files. V1.2, includes source. Author: Stefan Forster
Csh	V3.02a of a csh like shell derived from Matt Dillon's shell, V2.07. Includes many new or improved commands, some bug fixes, etc. Includes source. Author: Matt Dillon, Steve Drew, Carlo Borreo, Cesare Dieni
MIDIsoft	A program to transfer sound samples between the Amiga and a Roland S-220. V1.0, binary only. Author: Dieter Bruns
Pyro	A screen blanking program that goes beyond the normal blanking process. When there are no input events, pyro takes over and starts a little fireworks display in color. V1.1, binary only. Author: Steve Jacobs and Jim Boyd
SnipDemo	Demo version 1.23 of signal processing program sold by Digital Dynamics. Binary only. Author: John Hodgson
Viewer	A very small program for displaying IFF pictures of any resolution. This one is written in assembly code and is only 988 bytes long. Binary only. Author: Mike McKittrick

Fred Fish Disk 200

NotBoingAgain	Dr. Gandalf's entry for the First Annual Badge Killer Demo Contest. It is an interlaced HAM animation with nicely integrated sound effects. It is a great visual pun on the original Boing demo, but to say anymore would ruin the effect. Binary only, requires 1 Mb of memory. Author: Dr. Gandalf (Eric J. Fleischer, MD)
Tank	This is Vincent's entry for the First Annual Badge Killer Demo Contest. It is an animation of a "fishtank simulator", with sound effects and a cute twist. Binary only. Author: Vincent H. Lee

Fred Fish Disk 201

Draco	Update to Chris Gray's Draco distribution for the Amiga.Enhancements include support for floating point, register variables, more optimization, improved call/returnstandard, etc. V1.2, an update to FF76. Requires documentation from FF77 to complete the distribution kit. Binary only. Author: Chris Gray
DropCloth	DropCloth lets you place a pattern, a 2 bitplane IFF image or a combination of a pattern and image, into the WorkBench backdrop. This is version 2.4, an update to version 2.2 on disk 128. Shareware, binary only. Author: Eric Lavitsky

Fred Fish Disk 202

SlavicFonts	A whole bunch of new fonts from Robin LaPasha. Version 1.0. Author: Robin LaPasha
Vlt	VLT is both a VT100 emulator and a Tektronix (4014 plus subset of 4105) emulator, currently in use at SLAC (Stanford Linear Accelerator Center). Although the VT100 part was originally based on Dave Wecker et al.'s VT100, many enhancements were made. The program requires ARP, and it has an ARexx port. XMODEM 1K/CRC and Kermit protocol support also included. Version 3.656, binary only. Author: Willy Langeveld

Fred Fish Disk 203

Examples	Assembly and C code examples, including some old favorites (like speechtoy and yachtc3) downcoded to assembly language. Includes a replacement for the official audio device, an example of creating a subtask, a rewrite in assembly of R. J. Mical's file requester, an example of installing a custom input handler ahead of intuition, and more. Author: Jim Fiore & Jeff Glatt
GurusGuide	The source files for all examples published in the "Guru's Guide, Meditation #1: Interrupts" by Carl Sassenrath, the architect of the Amiga's low-level multitasking operating system and designer of Exec. Author: Carl Sassenrath
Isam	A library of routines to access relational data base systems using the Index Sequential Access Method (ISAM). This is beta version 0.9, binary only. Author: Kai Oliver Ploog

Fred Fish Disk 204

FileReq	A simple file requestor, written as an exercise by the author to see how easy it would be (it wasn't). Includes source. Author: Jonathan Potter
GnuGrep	The grep program from the GNU project. Replaces grep fgrep, egrep, and bmgrep. Currently does not expand Amiga style wildcards, so if you wish to scan multiple files you will need to use it with a shell that does this for you. Version 1.3, includes source. Author: Mike Haertel, James Woods, Arthur Olson, Richard Stallman, Doug Gwyn, Scott Anderson, Henry Spencer
HAMCu	Installs a custom copper list for the current active view (usually workbench) that contains all the colours from 0x000 to 0xfff. A neat effect and an easy way to show off the color capabilities of the Amiga. Includes source. Author: Jonathan Potter
Image-Ed	An shareware icon editor submitted by the author for inclusion in the library. Suggested shareware donation of $20. Version 1.8, binary only. Author: Jonathan Potter
JPClock	A short clock program that is just packed with features. Includes source. Author: Jonathan Potter
MouseBounce	A short hack/game that makes your mouse pointer bounce around the screen. The object is to close the MouseBounce window and exit the game. Each time you click the mouse button, the pointer speeds up. Includes source. by: Jonathan Potter
PopDir	A small utility which "pops open" to help you look at the contents of a particular directory on demand. Version 1.4, includes source. by: Jonathan Potter
PopInfo	A small utility which "pops open" to give you information about the status of your devices & memory. V 2.9, includes source. by: J. Potter
Teacher	Teacher is a short, simple hack. I won't spoil the fun by telling you what it does. Includes source. Author: Jonathan Potter

Fred Fish Disk 205

Bally	Amiga port of the former arcade game named Click. This version now has sound effects. Version II, an update to FF181. Binary only, shareware. by: Oliver Wagner
BattleForce	A nicely done shareware game, submitted by the author, that simulates combat between two or more giant, robot-like machines. Binary only, version 3.01. Author: Ralph Reed
Chess	A port of a chess game posted to Usenet. This is an update to the version first included on disk 96. It has been upgraded to use an Amiga Intuition interface. Version 2.0, binary only. Author: John Stanback; ported to Amiga by Bob Leivian Version 2.0 upgrades by Alfred Kaufmann

Fred Fish Disk 206

Brownian	A demo based on both fractal theory and brownian motion. Includes source. Author: John M. Olsen
Hawk	A stereo image of a hawk. Requires red/green stereo glasses to view. Author: Unknown (no documentation included)
MemFlick	Treats all the memory in your Amiga like it was part of a bitplane inside a graphics display. Provides sort of a graphical picture of your memory usage. Binary only. by : Jim Webster
PeX	A demo of the various graphics capabilities of the Amiga. Author: Unknown (no documentation included) PictureGarden Another demo, apparently in compiled basic. Author: Unknown (no documentation included)
StereoDemo	A demo of stereoscopic graphics, written in assembly language. Requires red/green stereo glasses to view. Includes sources. Author: David M. McKinstry
Triple	3 demos of some of the Amiga's graphics and sound capabilities. Binary only. by: Tomas Rokicki

Fred Fish Disk 207

Coyote	Gene's entry to the 1988 Badge Killer Demo contest. A very cute (and large) animation. Requires about 1900 blocks of disk space, so it is distributed in "arc format". Author: Gene Brawn

Fred Fish Disk 208

AsteroidField	This is Michael's entry for the 1988 Badge Killer Demo Contest. It is a large animation of a spacecraft flying madly through an asteroid field (chased by unseen foes) that includes a couple of near misses. Author: Michael Powell

Fred Fish Disk 209

Bowl	This is Vern's entry for the 1988 Badge Killer Demo Contest. It is a Sculpt-Animate animation that shows three colored balls flying in circles above a mirrored bowl. Rendering the animation took about 2 weeks. Distributed in zoo format because of its size (zoo program included for easy unpacking). Author: Vern Staats
Dps	A program designed to work with the PrintScript program, a commercial PostScript interpreter for the Amiga, to provide a page previewer. V 1.1 and includes source. by: Allen Norskog

Fred Fish Disk 210

Calc	A very nicely done scientific/programmer/plotter calculator. The scientific portion has most of the operations found on the more popular handhelds. The programmer portion has all the special hex/binary/decimal conversions as well as register operations like ASL, ROL, LSL, AND, OR, XOR, etc. The plotter portion will plot equations. Other features include 26 memories, full mouse or keyboard operation, pull-down menus, and iconization. V 3.0, binary only. by: Jimmy Yang
LabelPrint	A program that allows you to easily print labels for your disks. Version 1.9, shareware, binary only (source available from author). Author: Andreas Krebs
NuHand	An animation of a hand with fingernails scrapeing on a desktop, including sound effects. This is Bryan's entry for the 1988 Badge Killer Demo Contest. Binary only by: Bryan Carey Gallivan

Fred Fidh Disk 211

AmigaWave	This is Allen's entry to the 1988 Badge Killer Demo Contest. It is an animation with sound effects by: Allen Hastings
Esperanto	A keymap modification to usa1 which, in conjunction with the supplied slate.font, will allow one to type in Esperanto and Welsh, in any program that will use keymaps & fonts by: Glyn Gowing
Image-Ed	An shareware icon editor submitted by the author for inclusion in the library. Suggested shareware donation of $20. V1.9, binary only. Fixes a serious bug in V1.8 on FF204. by: J. Potter
SignFont	A keymap and font that will allow the user to be able to type in American Sign Language, provided that one knows the font. Author: Glyn Gowing
VirusControl	A new virus detection and control program that checks disks during insertion, protects from link viruses, shows bootblock on a screen, periodically checks system vectors, controls access to files with a requester, etc. V1.3, includes full assembly language source code. Author: Pius Nippgen

Fred Fish Disk 212

Alice	This animation is Carey's entry to the 1988 Badge Killer Demo Contest. Author: Carey T. Pelto
DiskSalv	A disk recovery program for all Amiga file system devices that use either the Amiga Standard File System or the Amiga Fast File System. Disksalv creates a new filesystem structure on another device, with as much data salvaged from the original device as possible. Update to FF177. Binary only. Author: Dave Haynie
DogsWorld	This animation is Charles' entry to the 1988 Badge Killer Demo Contest. by: Charles Voner

Fred Fish Disk 213

Cucug	This animation of the Champaign-Urbana Commodore Users Group logo was submitted to the 1988 Badge Killer Demo Contest by Ed Serbe. by: Ed Serbe
Icons	Almost 300 icons in eight (!) colors. Uses a special program to get an eight color workbench to display these icons, which were made with DPaintII and IconGen. Most icons are miniatures of the main screen of their corresponding programs, or the picture they show, made with "iconize" and "recolor" from FF85. by: Wolf-Peter Dehnick

Fred Fish Disk 214

ArcPrep	ArcPrep prepares files and/or directories for archival with arc or any other program that can't scan through different directories and/or handle long filenames. V2.1, includes source. Author: Garry Glendown
MandelVroom	A Mandelbrot/Julia-curve generating program that features five numerical generators (integer, ffp, ieee, 020, and 020/881) in hand-crafted assembly for maximum speed, online mouse selectable help for all functions, generation of multiple pictures simultaneously, a sophisticated user interface with shaded gadgets, etc. Some of the other features include zoom, magnify, color-cycling, contouring, auto-contouring, histogram, statistics, presets, extra-halfbrite support, overscan, orbits, pan mode, and more. Requires 1Mb or more of memory. This is the source to V2.0, an update to FF78. A compiled binary, along with help files and example images, can be found on FF215. Author: Kevin Clague
MemDiag	A memory diagnostic program to identify addresses which produce memory errors, and a memory quarantine program which removes such defective addresses from the system's free memory list, until such time as the hardware errors can be corrected. Version 1.1, includes source. by: Fabbian Dufoe
RunBack	Another step in the evolution of Rob Peck's RunBackGround program, from disks 73 and 152. Allows you to start a new CLI program and run it in the background, then closes the new CLI. This version has been enhanced to use the NULL: device by Gunnar Nordmark (included), which is a "real" device, so it solves problems with previous versions of RunBack which used the Nil: "fake" device, causing many crashes. Includes source. Author: Rob Peck, Daniel Barrett, Tim Maffett
SmartIcon	This shareware program, submitted by the author, is an Intuition objects iconifier. Version 1.0 is limited to iconifying windows, which is still very handy. It adds a new "iconify gadget" to each window, that when clicked on, iconifies the window into an icon in the ram: disk. This is the same version as released on FF134, but now includes the source code. Author: Gauthier Groult

Fred Fish Disk 215

MandelVroom	A Mandelbrot/Julia-curve generating program that features five numerical generators (integer, ffp, ieee, 020, and 020/881) in hand-crafted assembly for maximum speed, online mouse selectable help for all functions, generation of multiple pictures simultaneously, a sophisticated user interface with shaded gadgets, etc. Some of the other features include zoom, magnify, color-cycling, contouring, auto-contouring, histogram, statistics, presets, extra-halfbrite support, overscan, orbits, pan mode, and more. Requires 1Mb or more of memory. This is V2.0, an update to FF78. Source is available on FF214. by: Kevin Clague

Fred Fish Disk 216

BackDrop	Backdrop allows you to define a pattern which will then be displayed on the workbench screen in the normally empty area behind all the windows. Similar in concept to DropCloth, but this one does not require workbench to be loaded (and does not cohabit very well with workbench). Includes source. Author: Eddy Carroll
C64Emul	An April Fools spoof that turns your Amiga into a C64, or at least makes it look that way. Includes source. Author: Eddy Carroll
Cloud	A program that generates and displays fractal surfaces that look remarkably like clouds. Based on ideas from the book "Fractals" by Jens Feder. Binary only. Author: Mike Hall
PrtSpool	A DOS handler, a print program, and a control program that implement a print spooling system. Like PRT:, the DOS handler waits for stuff to be sent to it to be printed. The print program does line numbering and page headers. The control program handles administrative functions. Binary only. Author: Daniel Barrens
VirusX	Version 3.20 of the popular virus detection/vaccination program. Features a test for 8 new viruses since the 3.10 version on FF175. Includes source. Author: Steve Tibbett
Wanderer	A neat little game with graphics and sound, ported from the Unix version, originally written on a Sun workstation. The idea for Wanderer came from games such as Boulderdash, Xor, and the Repton games from Superior Software. Includes a builtin editor for extending the game by adding additional screens. V2.2, includes source. Author: Steven Shipway and others. Amiga port by Alan Bland

Fred Fish Disk 217

AntiCBS	An animation cooked up by Leo in protest of CBS's coverage of the Hacker's Conference in Oct 88. After reading the transcript I was angered enough to feel this needed widespread distribution, even though it is quite old. by: Leo 'Bols Ewhac' Schwab
Echo	A small replacement for the AmigaDOS echo that will do some special functions, such as clear the screen, delete to bottom of screen, scroll the screen, place the cursor at a particular location, and set the text style and/or color. Includes source. Author: Garry Glendown
InstallBeep	This program replaces the DisplayBeep function so that an IFF 8SVX sound is played instead of the screen flashing. The PlayBeep function runs as a task in the background and runs asynchronously so the length of the sound does not slow anything down. Includes a couple of sample sound files. Version 1.1, binary only. Author: Tim Friest and Don Withey
SnipIt	An input handler wedge which allows you to clip text from any window and then paste that text anywhere, as though you had typed it on the keyboard. You mark the text you want to "snip" using the mouse, and then use the mouse to "paste" the last snipped text into the active window, requester, or anywhere. Version 1.2, includes source. Author: Scott Evernden
SonixPeek	A utility to let you list all the instruments used by one or more Aegis Sonix score files. It can scan individual files, or search one or more directories, checking all score files in each directory. The output is a list of all the instruments you need to have present in order to be able to play the indicated score files. Includes source. Author: Eddy Carroll
Stevie	A public domain clone of the UNIX 'vi' editor. Supports window-sizing, arrow keys, and the help key. V3.6, includes source. This is an update to V3.35a on FF197. Author: Various, Amiga work by G. R. (Fred) Walter

Fred Fish Disk 218

EdLib	A library of additional functions for Manx. This is V1.1, an update to V1.0 from FF183. Includes source. Author: Edwin Hoogerbeets with C-functions from several different authors
Mandel	Another mandelbrot generator program, with bits and pieces of code from C. Heath and R.J. Mical. This is V1.3, an update to FF111. New features and improvements include an ARexx interface, coordinates in sight, more state info saved with a picture, batch files, programmable functions, and more plotting options. Includes source. Author: Olaf Seibert
Maze	A program that lets you build mazes and then solve them. Mazes can be trivial one level mazes to very difficult three level mazes. Version 1.2, includes source. Author: Todd Lewis
PcPatch	Patches for PCCopy and PCFormat from the EXTRAS disk, to allow reading, writing, and formatting of any kind of MS-Dos style disks, including 720K 3.5" diskettes. Binary only. This is an update to the version on disk 163. Author: Werner Guenther
Scanner	Scanner makes commented C code of all intuition structures in memory. The structures will receive correct pointers towards each other. Scanner starts looking at IntuitionBase, and follows all pointers, storing them in memory. When finished, it writes all the structures to the standard output. Version 1.0, includes source. Author: Stefan Parmark
Worm	An Amiga implementation of the classic "worms" program, based on an article in the Dec 1987 issue of Scientific American. You can specify the size and length of the worms, and the number of worms. Includes source. Author: Brad Taylor, Amiga port by Chuck McManis

Fred Fish Disk 219

DeepSky	A database containing information on 10,368 non-stellar objects, 600 color contrasting easily resolved double stars, 70 stars for setting circles, and misc white dwarfs, red stars, binaries, etc. The database is distributed in zoo format, and is about 1.2 Mb after extraction. V 5.0. Author: Saguaro Astronomy Club
Mv	A Unix style mv/cp/rm program that moves, copies, or removes files. Includes interactive mode, recursive mode, and force quiet mode. Copies file permissions, dates, and comments, supports arp style wildcards, supports moves across volumes, honors the delete bit. V 1.1, includes source. Author: Edwin Hoogerbeets

Fred Fish Disk 220

DNet	A link protocol that provides essentially an unlimited number of reliable connections between processes on two machines, where each end of the link can be either an Amiga or a Unix (BSD4.3) machine. Works on the Amiga with any EXEC device that looks like the serial.device. Works on UNIX with tty and socket devices. Achieves better than 95% average throughput on file transfers. This is V2.0, an update to FF145. Includes sources for both the Amiga and Unix versions. Author: Matt Dillon

Fred Fish Disk 221

AllocMaster	Allocmaster is a program inspired by Nick Sullivan's "Reserve" article in Amiga Transactor, for controlling the amount of both Chip and Fast memory available to the rest of the system. It is very useful for testing applications in low-memory situations. It also has a snapshot feature to report differences in available memory before and after running an application. V 1.17, binary only. Author: John Gerlach Jr.
ANSIEd	Demo version of an ANSI screen file editor. It allows you to easily create and modify a screen of ANSI-style text/graphics on the Amiga. The standard ANSI color set (red, green, yellow, blue, magenta, cyan, white) and text styles (plain, boldface, underlined, italic) are provided, along with some simple editing and drawing functions. This demo version has the save features disabled. V1.2.0aD, binary only. Author: Gregory Epley
BallyII	Amiga port of the former arcade game named Click. This version adds a "cheat" mode and fixes some minor bugs. VII+, an update to FF205. Binary only, shareware.Author: Oliver Wagner
DFrame	A utility that helps you to create animated bobs. It installs itself in DPaint II, after which you can draw each bob in DPaint II within its own frame and check the animation by calling DFrame from within DPaint. V1.02, binary only.Author: Jan Buitenhuis
IFFM2	Demo version of an IFF support module for Interface Technologies M2Amiga Modula-2 system. Includes a version of ViewILBM (with source) that uses the IFF support routines. V1.0.0D, binary only. Author: Gregory Epley
Steinschlag	A tetris like game (Steinschlag means "Falling Rock") submitted by the author. V1.5, binary only. Author: Peter Handel

Fred Fish Disk 222

MemGauge	A tool to display the current memory usage, very much like the usage bar Workbench displays in root directories. V1.4, includes source. Author: Olaf 'Olsen' Barthel
Mischief	This little program is in the long tradition of "display hacks". It uses the input.device to perform various acts of mischief. Includes source. Author: Olaf 'Olsen' Barthel
Plplot	A library of C functions useful for scientific plotting on the Amiga. The library is Lattice C compatible. Contour plotting, three dimensional plotting, axis redefinition, log-log plotting and multiple subpages are a few of Plplot's features. The plots can be displayed on a monitor or sent to a graphics file for subsequent printing. V1.00, includes source. Author: Tony Richardson

Fred Fish Disk 223

Csh	V3.03a of a csh like shell derived from Matt Dillon's shell, version 2.07. This is an update to FF199. Includes a couple of new filter commands, new dir option, new editing options, sourcing of a standard startup file, and some bug fixes. Includes source. Author: Matt Dillon, Steve Drew, Carlo Borreo, Cesare Dieni
FixDisk	A program to recover as much as possible from a defective disk. It can sometimes recover damaged (unreadable) tracks, check file integrity, check the directory structure, undelete files, copy or show files, fix corrupted directory pointers, etc. Full intuition interface. Version 1.0, binary only. Author: Werner Guenther
GravSim	A program to animate up to 6 planetary masses, all of which exert a mutual gravitational force on each other. The planetary masses can be placed anywhere on the screen, and their mass and initial velocity can be determined by the user. The program then steps the animation through time, plotting and displaying the new position in the trajectory of each mass. V1.50, includes source. Author: Richard Frost
Iff2Sun	A small utility for those of you who may have access to a Sun workstation. Takes an Amiga IFF file and converts it to a Sun rasterfile format. Update to FF174, with better parsing, support for HAM mode, and some bug fixes. Source only, as the program needs to be re-compiled and run from a Sun. Authors: Steve Berry, Mark Thompson
IFFtoSUN	This program takes a standard IFF format image and translates it into a SUN rasterfile format, like the Iff2Sun program also on this disk. However, this one runs on the Amiga. V1.31, includes source. Author: Richard Frost
Paccer	A pacman clone with sound and a game screen editor. V1.0, shareware, binary only. Author: Dirk Hoffman
PopInfo	A small utility which "pops open" to give you information about the status of your devices and memory. V3.0, an update to FF204. Includes source. Author: Jonathan Potter
SetCPU	A program designed to allow the user to detect and modify various parameters related to 32 bit CPUs. Includes commands to enable or disable the text/data caches, switch on or off the '030 burst cache line fill request, use the MMU to run a ROM image from 32-bit memory, and to report various parameters when called from a script. V1.5, an update to FF187. Includes source. Author: Dave Haynie

Fred Fish Disk 224

CLImax	For all those people who wish that their CLI windows had 25 lines of 80 characters just like an old fashioned non- windowing computer, the answer is here. CLImax creates a borderless backdrop CLI window on a custom screen. Also thrown in is MoveSys, which reassigns SYS:, C:, S:, L:, DEVS:, LIBS:, and FONTS: to a new volume with one simple "pure" command. Includes source. Author: Paul Kienitz
KickMem	A program for A1000 hardware hackers that have done the Amazing Computing 512K upgrade. KickMem will patch your 1.2 or 1.3 kickstart disk to perform addmem during kickstart. This allows warm boot surviveability of ram disk devices and eliminates addmem commands from your startup sequence. V2.0, includes source. Author: Dave Williams
MoreIsBetter	These two hacks make MORE more useful. One is called V; it's a small "pure" CLI command that acts as a front end for More, causing it to create its own window. Make V and More both resident! The other is Fenestrate, which surgically alters the CON: window spec inside More enabling it to, for instance, use ConMan features to create a borderless window on the topmost screen (very useful with CLImax). Includes source. Author: Paul Kienitz
PetersQuest	This cute game has you, the intrepid Peter, following a trail of hearts through a world of 20 levels, riddled with porcupines and other hazards, to rescue Daphne, the love of your life that has been kidnapped by the evil Brutus. Version 1.0, binary only. Author: David Meny
Who	A rewrite of "who", from FF79, which gives substantially more elaborate information about the tasks currently running (or waiting) on your Amiga. Includes source. Author: George Musser, rewrite by Paul Kienitz
Xebec	A couple of hacks to make life easier for those who have Xebec hard disks. One makes it more possible to Mount a Xebec hard disk with the Fast File System, the other is a compact head parking program. Includes source. Author: Paul Kienitz

Fred Fish Disk 225

AmigaTCP	The KA9Q Internet Software Package. The package supports IP, ICMP, TCP, UDP, and ARP as basic services, and implements the FTP, Telnet, and SMTP protocols as applications. It runs on IBM PC and clones, the Apple Macintosh, and the Amiga. Includes source. Author: Bdale Garbee, Phil Karn, Brian Lloyd
MyMenu	MyMenu allows you to add your own menus to the WorkBench menu strip, to run commonly used commands. MyMenu will allow you to execute both CLI and WorkBench programs, and is configured with a normal text file. Includes source. Author: Darin Johnson

Fred Fsih Disk 226

Vlt	VLT is both a VT100 emulator and a Tektronix (4014 plus subset of 4105) emulator, currently in use at SLAC (Stanford Linear Accelerator Center). Although the VT100 part was originally based on Dave Wecker et al.'s VT100, many enhancements were made. The program requires ARP, and it has an ARexx port. XMODEM 1K/CRC and Kermit protocol support also included. V4.036, with many enhancements over the previous version, 3.656, on FF202. New features include support for other serial ports, external file transfer protocols, and "chat" mode. Improved behavior on the Workbench. Tektronix emulation now allows saving IFF files, PostScript files, and printing bitmaps to the printer. Many other enhancements and bug fixes. Binary only. Author: Willy Langeveld

Fred Fish Disk 227

MidiLib	A disk based library that permits sharing of the serial port by MIDI applications through a MIDI message routing and processing system. The midi utilities include a midi monitor to display incoming midi messages to the console, a routing utility, a midi library status utility, and more. V2.0, an update to FF101, and includes significant speed enhancements, new utilities to play with MIDI files, and updated utilities, documentation and examples. Binary only (source for examples and bindings however). Author: Bill Barton
PickPacket	PickPacket gives you a visual display of the DosPacket structures that are sent to handlers, and lets you see the results. You can actually perform handler operations such as open files, read or write data, Examine or ExNext locks, and so forth, all by talking directly to the file system handler involved using PickPacket. V1.0, includes source. Author: John Toebes and Doug Walker
RexxArpLib	A library which originally was supposed to be an ARexx interface to the ARP library. However, it has also become an interface to various Intuition functions, containing over 50 functions including a file requester, string/boolean requester, environment variable functions, simple message window, wildcard expander, etc. V2.3, an update to FF178. Binary only. Author: W.G.J. Langeveld
RexxMathLib	A library which makes various high level math functions such as sin, tangent, log, etc. available in ARexx. V1.2 and 1.3, binary only. Author: W.G.J. Langeveld

Fred Fish Disk 228

Az	A nice little text editor that is fast, simple to use, and very Amiga'ized. V1.40, binary only.Author: Jean-Michel Forgeas
Glib	A text screen oriented librarian and editor for synths. Supports the TX81Z, DX100, DEP5, DW8000, and K-5. Includes source. Author: Tim Thompson, Steve Falco, and Alan Bland
JazzBench	A drop-in multitasking replacement for WorkBench. It has more features that WorkBench and is fully multitasking (no more waiting for ZZZ clouds). It allows you to extend it, add your own menus, key shortcuts, etc. This is alpha version 0.8, binary only. Author: David Navas
Xoper	Very comprehensive program to monitor and control system activity. Monitor cpu, memory usage, ports, interrupts, devices. Close windows, screens, show loaded fonts or last Guru code number. Clean up memory, flush unused libraries, devices, fonts. etc. and a whole bunch more! Spawns its own process. A very handy background task to have loaded. V1.3, an update to FF171. Assembly source included. Author: Werner Gunther

To Be Continued......

In Conclusion

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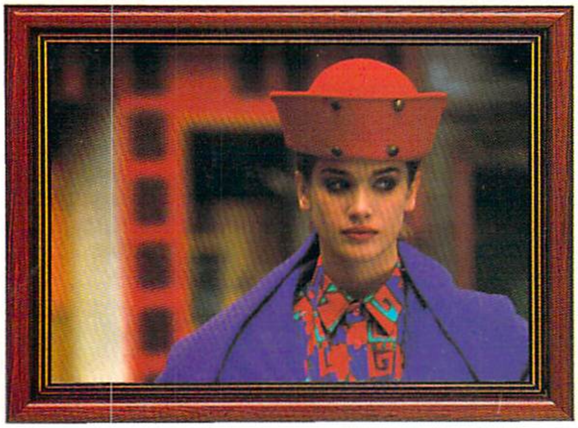

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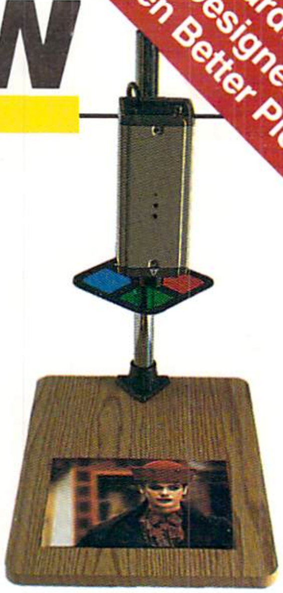

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